NEW REMEDIES

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BAILLIÈRE TINDALL & COX

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NEW REMEDIES.

A SUMMARY

OF

NEW REMEDIES.

BY

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AUTHOR OF "INFLUENCE OF DRUGS ON LACTATION;" "SEWER GAS: ITS PHYSIOLOGICAL AND PATHOLOGICAL EFFECTS ON ANIMALS AND PLANTS" (BOYLSTON PRIZE ESSAY); "WHOOPING-COUGH: ITS PATHOLOGY AND TREATMENT" (FOTHERGILLIAN PRIZE ESSAY), &c., &c.

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PREFACE.

The Newer Materia Medica, introduced to the Profession by the energy of some of our pharmaceutists and botanists, is now assuming such proportions that the busy practitioner and prescribing physician have difficulty in keeping pace with its extension. We have but to turn to the excellent volume called the "Newer Materia Medica," published by Parke, Davis, & Co., Detroit, Michigan, to see the vast proportions this literature has already assumed.

A short account of the most recent additions to our Pharmacopœia cannot fail to be useful to those who are anxious to keep pace with modern advances.

With this object this Summary has been prepared. It is compiled from our principal journals, medical and pharmaceutical. Owing to the many additions continually being made to our Pharmacopœia these notes must be ephemeral, so that an expensive work is not required. New editions will be, I trust, issued from time to time to keep the notes up to the times.

Of the value of New Remedies and on the importance of studying them we have a striking example in the new anæsthetic *Cocaine.* Though Niemann, when he first isolated Cocaine in 1860, recognised that it produced temporary insensibility on the part of the tongue with which it came in contact, yet it was reserved for Dr. Koller, of Vienna, to establish the present reputation which it enjoys as an anæsthetic of the highest order, especially in laryngoscopic and ophthalmic practice. In the *Lancet,* Dec. 6, 1884, p. 990, there is a translation of Dr. Carl Koller's paper read at the meeting of the Vienna Royal Imperial Society of Physicians, Oct. 17, 1884, and in the pages of the *Lancet, British Medical Journal,* and *Medical Press* of recent dates, are to be found communications from the leading specialists, as Mackenzie, Semon, Bader, Critchett, Bell Taylor, testifying to the accuracy of Dr. Koller's observations. American specialists, Bosworth, Polk, Moore, have also confirmed the results. It has been tested in every way; not only the eye and throat, but all the mucous surfaces, have been experimented on, with the result of establishing for it a very general use. The hydrochlorate of Cocaine in a 2 to 4-per cent. aqueous solution has been sufficient for eye operations, whilst a stronger solution—4 to 20-per cent.—is required for less sensitive parts. There is great promise from this recent discovery. It should encourage the profession to test new remedies, in the hope, not only of thereby adding to our therapeutical store, but also of superseding useless or over-valued preparations.

TH. M. DOLAN, M.D.

HORTON HOUSE, HALIFAX,
Sept. 1*st*, 1885.

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ABRUS PRECATORIUS.—Jequirity.

Description.—Small oval scarlet and black seeds of plant, used in Brazil as a domestic remedy in treatment of ophthalmic diseases.

Physiological action.—Artificial ophthalmia set up by irritation, said to be caused by bacilli. This view contradicted at International Medical Congress, Copenhagen, 1884, by Drs. Salomonsen and Holmfeld (*vide* Abstracts, Congress, p. 11, Section Pathology).

Preparation.—Infusion of the seeds made by maceration (*Vide Brit. Med. Jour.*, Sept., 1884), the recipe of Professor Shoemaker, Philadelphia, for use in skin disease.

Dose and mode of administration.—An infusion is made of powdered seeds 3 parts, cold water 500 parts, and hot water 500 parts. After filtering, it is applied 2 or 3 times a day, and injected if necessary. In the East, seeds are made into a paste, and applied for alopecia, sciatica, paralysis, and nervous diseases.

ACETAL.—$C_6 H_{14} O_2$.

Description.—A colourless liquid, sp. gr. 0·821, soluble in 18 vol. of water at 62° F.

Preparation.—Acetal is a product of the oxidation of alcohol, and is converted by oxidising agents into aldehyde and acetic acid.

Physiological action.—In experiments made on frogs, rabbits, dogs, and cats, death resulted from apnœa, caused by paralysis of respiratory muscles. It acts powerfully on respiratory centres.

Dose and mode of administration.—Not fixed.

ADONIS VERNALIS.

Description.—A perennial herb growing in mountainous districts of Germany, flowering in March or April. Dr. Cervello found in it one active principle, *adonidin.*

Preparation.—Adonidin is obtained by precipitating a tincture of the plant made with 50 per cent. alcohol by basic acetate of lead, decanting and evaporating the clear liquid to syrup. This is then made alkaline with ammonia, boiled with a strong solution of tannin until a precipitate is no longer thrown down. The precipitate, after being washed, is decomposed with zinc oxide in presence of alcohol. The alcoholic solution is then evaporated, and colouring matter precipitated by ether. Adonidin is obtained in pure state by evaporation.

Description.—Adonidin is non-nitrogenous, colourless, odourless, amorphous, and very bitter, soluble in alcohol, slightly so in ether and in water.

Therapeutical effects.—Identical with digitaline, but not cumulative.

Dose.—Not definitely fixed.

AGARIC

White Polyporus Officinalis, formerly called Agaricus laricis.

Recommended by Murrell for night sweats of phthisis.

Preparation.—Agaricine is the active principle. A fluid extract and a tincture are made. The powder is light and bulky. Dose of the powder, 3 to 30 grains; extract, 3 grains; agaricine, 1-12th of a grain.

ALSTONIA CONSTRICTA.

A tall shrub or tree, abundant in New South Wales and Queensland.

Chemistry.—Dr. Hessé found in the bark four alkaloids

—alstonine, alstonidine, porphyrine, and porphyrosine.

Physiological action.—Dr. Bixby considers it to be a cerebro-spinal stimulant and tonic, acting on the great sympathetic nerve centres. It strengthens the heart's action.

ALSTONIA SCHOLARIS.

The bark of a handsome forest tree, growing abundantly in the Indian Peninsula.

Chemistry.—It contains an alkaloid named ditamine, a white flocculent, amorphic precipitate, freely soluble in ether, chloroform, benzoine, or alcohol.

Therapeutical uses.—Dita bark is well known in India; it is one of the officinal articles in the Indian Pharmacopœia. It is described as an astringent, tonic, anthelmintic, and antiperiodic. It is used for the treatment of diarrhœa and dysentery, for debility after fevers, and in exhausting diseases.

Preparation and doses.—Powdered bark, 3 to 5 grains in pill.

Infusion made by macerating half an ounce of the bruised bark in ten ounces of boiling water and straining. Dose, 1 to 2 ounces two or three times a day.

Tincture—2½ ounces of the bark are macerated in one pint of proof spirit for seven days; it is then filtered and made up to a pint with proof spirit. Dose for an adult, 1 drachm to 1½ drachm.

Ditaine is used in Manilla in the following formula:—

℞ Ditaine, ʒss.;
Syrup. citri, ℥j.;
Aq. flor. aurant., ℥v.
One teaspoonful every hour.

AMYL NITRITE.—$O_{10} H_{11} O_{11} O_3$.

Description.—Discovered in 1844, by Balard. Further investigated in 1859 by Guthrie. Brought before British Association at Newcastle in 1863 by Dr. B. W. Richardson. A pale amber-coloured liquid, sp. gr. ·677; boils about 96° F.; soluble in alcohol, ether, and chloroform.

Physiological action.—After absorption it increases heart's action, exerts its influence on the ganglionic nervous tracts, which is of a paralysing nature.

Therapeutic Uses.—Useful in angina pectoris. This has been established by Brunton. It is a specific for this disease. Other diseases in which it has been tried are hour-glass contraction, colic, tetanus, collapse, cephalalgia, sea-sickness, ague.

Dose and mode of administration.—By inhalation. 5 to 10 drops can be obtained in glass capsules ready for use.

Hypodermic injection—Ten minims of a ten per cent. alcohol solution may be used.

Internally—

Nitrit. amyl, 36 mms.;
Rectified spirit, 6 dr.;
Glycerine, 1½ oz.

One teaspoonful taken slowly.—Dr. B. W. Richardson.

ANEMONE PULSATILLA.

First brought into notice by Baron Störek.

The properties, according to Phillips, are chiefly due to anemonin, $C_{15} H_{11} O_7$, a crystalline substance obtained by distilling plant with water and separating it from anemonic acid by means of boiling alcohol.

Physiological action.—Paralyses medulla and spinal cord, and causes irritation of digestive tract and kidneys, subdues neuroses reflex in origin.

Therapeutical uses.—It has long been used in homœopathy for catarrhal affections. Is recommended in ophthalmia, acute inflammation of mucous membranes, amenorrhœa, leucorrhœa.

Preparation and doses.—The tincture is made from 1 part of whole herb to 8 parts of spirit.

Dose, 5 to 10 minims every four hours.

The extract, 1 or 2 grains daily.

For lotion, take ʒj. or ʒij. of the tincture to ℥iv. of tepid water.

Anemonin has been given by Clarus in doses of ½ to 1 grain in asthma, whooping-cough, and irritative cough.

APIOL.

A greenish brown oily fluid, obtained by exhausting the seeds of Apium petroselium with alcohol, shaking the tincture with animal charcoal and soap, making it to an extract, which is then treated with ether to remove apiin. The etherial solution is then evaporated, residuum mixed with $\frac{1}{8}$ of its weight of litharge, to remove fatty oil, the mixture allowed to stand for 24 hours, and then filtered through a thin layer of animal charcoal.

Dose and therapeutic use.—7 to 15 grains have been given in intermittent fever. It has also been used as an emmenagogue. 5 or 6 drops may be given in *perles*.

APOMORPHIA HYDROCHLORATE.

Discovered in April, 1867, by Drs. Matthiesen and Wright; contains one molecule of water less than morphia.

Pale greyish white acicular crystals, soluble in thirty parts of cold or less of warm water. Turns green on exposure to air. Treated with perchloride of iron, turns a *rose colour*.

Physiological action.—First excites, and then retards the reflex excitability of the spinal cord, and diminishes heart's action.

Therapeutic uses.—As an emetic, 1-10th to 1-4th grain given internally, 1-30th to 1-10th subcutaneously. Recommended by Murphy and Tomlinson in sunstroke. Has also been used in bronchitis. Lozenges are made containing 1-50th of a grain.

APOCYNUM CANNABINUM.

A root used in the United States under the name of Canadian hemp.

Therapeutical action.—Diuretic and hydragogue (Dr. Dabney). Dr. B. Hughes says that in hydrocephalus it is useful, also in menorrhagia, coryza. It is emetic, lowers the pulse, and produces drowsiness

Preparation and doses.—Of the powdered root 1 to 20 grains. A decoction is made by boiling $\frac{1}{2}$ oz. of the dried root in $1\frac{1}{2}$ pints of water down to 1 pint.

Dose is 1 to 2 ounces twice or thrice a day. A tincture is made of 1 part of the root to 10 of proof spirit. Dose, 5 minims to 1 drachm.

ARAROBA, or GOA POWDER.

Goa powder is the result of the metamorphosis of the contents of the cells of the heart wood of a large forest tree, 80 to 100 feet high, growing in the forests of Brazil south of Bahia. The tree is called Angelino Amarjoso by the natives.

Chemistry.—The active principle is chrysarobin, $C_{30} H_{26} O_7$, forming chrysophanic acid under the influence of moist air and ammonia.

The acid is generally used in place of the crude powder.

Therapeutical action.—Externally it has been used in psoriasis, lupus, pityriasis, ringworm of scalp, tinea, eczema, and other skin affections.

It has also been given internally in psoriasis.

Preparation and doses.—An ointment is made by mixing 20 grains of the acid with 1 ounce of benzoated lard. A milder ointment is used, for eczema, of 5 to 10 grains to the ounce.

Internally the dose is from 1-10th to 2 grains, 1-10th to ½ grain being usual dose.

It is liable to produce vomiting and purging.

ARBUTIN, $C_{24} H_{32} O_{14} H_2 O$.

An active principle obtained from arbutin and plants of same order, as Aritostaphylos, Chemaphilia, Gaulteria, &c.

Chemistry.—Arbutin was discovered by Kawalier in 1862.

It occurs in tufts of long, circular, colourless crystals, having a bitter taste. Soluble in water, alcohol, and ether.

Physiological action.—According to Meneche, it acts as a diuretic. It differs from Uva Ursi in not causing nausea or vomiting in large doses.

Therapeutical action.—Useful in urethritis, &c.

Dose.—6 or 8 grains dissolved in water.

ARCTIUM LAPPA.

The root and seeds of above plant. There are several varieties of burdock, but the one used is *Arctium majus* (Horn). The seeds contain a fixed oil and a tasteless resin, insoluble in water.

Therapeutic action.—Dr. Reiter tried it himself for psoriasis inveterata; he also gave it for dyspepsia.

Preparation.—The active properties are extracted by diluted alcohol. The seeds are ground in a coffee-mill and macerated in proof spirit, 2 oz. to 20.

Dose.—A tablespoonful three times a day, continued for weeks.

ARENARIA RUBRA.

A branching plant, with spreading stem of 5 to 8 in. high, growing abundantly on the sandy shores of Algeria, and the shores of the Mediterranean.

Chemistry.—An alkaloid has not been discovered. The dried plant has an odour resembling fresh hay, and yields to ether, chlorophyll, and a resinous body having the odour of benzoine.

Therapeutical uses.—In 1878, Dr. E. L. Bertherand directed the attention of the profession in France to this plant as a remedy for acute and chronic vesical catarrh, dysuria, cystitis, nephritic colic, &c.

Preparation and doses.—A decoction is made, the dose of which is a wineglassful three or four times a day, and an aqueous extract, the dose of which is 30 grains four or five times a day.

AILANTHUS GLANDULOSA.

A tree growing plentifully in China, of which there are two varieties, one fragrant and the other fœtid. The bark of the roots and stem of the former is chiefly used.

Therapeutical uses.—It is used by the Chinese as an antidote against arsenic and sulphur. It is an anthelmintic and diuretic, and has been employed in diarrhœa and dysentery. Dr. Dugat has used it, at the French Hospital at Peking, with success in dysenteric cases.

Preparation and dose.—Pound 15 to 20 drachms of bark in a mortar with a few ounces of water; express through linen. The juice is then used. Dose, a teaspoonful in tea for four consecutive mornings.

ALVALOS.

An euphorbiaceous plant growing in Pernambuco, from which a milky juice exudes, in which its activity resides.

Therapeutical uses.—According to Dr. J. da Costa and Dr. Vellord, this is a remedy for cancer, epithelioma.

Preparations and dose.—It is used externally. The fleshy stem of the plant is sliced and laid on cancer. The juice is thus deposited and allowed to dry. The part is first washed with tobacco juice, and then arnica and water are applied for twenty-four hours, and so on *de novo.*

ANDROMEDA LESCHENAUTII, D.C.

Chemistry.—This plant by distillation yields an essential oil almost identical with methyl-salicylic acid. This was first brought to notice by W. McIvor. W. Broughton, Government Quinologist, experimented with methyl-salicylic acid, and succeeded in preparing from it pure carbolic acid. Mr. Broughton says:—"Should circumstancs render the supply of the English product uncertain, a practically inexhaustible source exists in this country." Salicylic acid may also be obtained from it.

Therapeutical uses.—Dr. Waring, C.I.E., has drawn attention to this plant in the *Midland Medical Miscellany*, May 1883. The essential oil is an aromatic stimulant and anti-spasmodic.

Preparations.—Carbolic acid, salicylic acid; useful in all cases where these preparations are indicated, in similar doses.

BAPTISIN.

The purified extract of Baptisia tinctoria.

Therapeutical uses.—It has been employed as a cathartic, laxative, and emetic. In small doses it produces a gentle effect on bowels, increasing according to dose. It stimulates hepatic action.

Preparations and doses.—In pill with acacia mucilage, dose, 1 to 5 grains.

BERBERIS AQUIFOLIUM.

A small evergreen shrub growing in California, Utah, Nevada.

Chemistry.—The root contains 2·35 per cent. of berberine and 2·82 per cent. of oxyacanthine, with resinous matter, soluble in alcohol.

Therapeutical uses.—It has been used as an antiscorbutic and antiperiodic by the miners of the Western States. It has been employed in malarial fevers when the spleen is enlarged, in ague, intermittents, &c. It is an alterative tonic, and hence its use in syphilis.

Preparations and dose.—A tincture is made of the strength of 4 oz. of the root to 1 pint of spirit. Dose, 3 to 10 minims.

Diluted with water, it is employed as a wash for ulcerated surfaces.

Does not combine with iodide of potassium.

Parke, Davis, and Co. have a preparation in the form of a fluid extract, the dose of which is 15 to 30 drops three or four times a day.

BEBERIÆ SULPHAS.

An alkaloid obtained from the bark of Nectandria Rodioei.

Therapeutical uses.—Employed with advantage in neuralgic affections, and in cases where quinine is indicated. In uterine affections it is a remedy from which some benefit has been obtained.

Preparation and dose.—Sulphate of beberine. Dose, 1 to 10 grains.

BOLDO.

The leaves of Boldoa fragrans, N.O., Monomiaceæ, a tree growing luxuriantly in Chili.

Therapeutical uses.—It has been used from time immemorial by the natives. It is recommended in rheumatism, dyspepsia, yellow fever, and is said to have sedative and tonic properties. It stimulates nervous and circulatory system and excites hepatic action.

Preparations and doses.—Fluid extract, dose 1 to 10 minims. Tincture, 1 to 8, dose 10 to 30 minims.

BORACIC ACID.

A preparation obtained from borax by action of sulphuric acid.

Occurs in white pearly crystals; soluble in 26 of cold water, 1 in 60 of rectified spirit, and in 5 of glycerine.

Therapeutical uses and action.—Has been recently employed as a preservative of meat, owing to its antiseptic properties. It has also been introduced as a suitable supplement to the Listerian method of dressing wounds—for which it has been prepared in many forms. It has been administered internally in affections of the mouth. It checks putrefactive changes in the stomach.

Preparations and doses.—1. Boracic lint. 2. Boracic wool. 3. Pastiles. 4. Unguentum. 5 Boroglyceride.

BRYONIA.

The roots of Bryonia diöica and B. alba, growing in Germany, England, and other parts of Europe. The former produces red berries, the latter black.

Therapeutical uses.—Bryonia has long been used by the homœopaths, who prefer the black-bearing variety. It is useful in dropsical affections, in pleurisy, in pleuro-pneumonia, muscular rheumatism, catarrhal pneumonia, enlargement of spleen, whooping cough.

Physiological action.—It reduces blood pressure, and is a depressant of the heart's action. This must be borne in mind.

Preparations and dose.—A tincture is made of 1 oz. of the dried plant to 9 oz. proof spirit. Dose, 3 to 11 minims.

The infusion is made of ʒij. of the root, to ℥viij. of water. Dose, 1 to 2 fluid ounces.

CAULOPHYLLIN.

A powder obtained from the root of Caulophyllum thalictroides.

Therapeutical actions.—It is an emmenagogue, diuretic, diaphoretic, and anti-spasmodic. Its use is indicated in affections of the uterine organs.

Preparations and dose,—Pil. dose 1 to 3 grains.

CALENDULA.

Fresh leaves and flowers of Calendula officinalis (Marigold). It is in the United States Pharmacopœia.

Therapeutical uses.—It has long been used by homœopaths for the treatment of wounds, and it is claimed for it that it rapidly produces cicatrisation.

It has also been given in jaundice.

Preparations.—A tincture is made from the fresh herb, 20 parts of which are macerated with twice the weight of dilute alcohol. After percolation it is weighed, so as to make 100 parts of tincture. The tincture diluted with water is applied, or it is used with spermaceti ointment.

CANNABINE.

Indian hemp yields cannabine and cannabine hydrate; combined with tannin the hydrate forms a staple compound.

Therapeutical uses.—Recommended by Frommelier as a hypnotic, and useful in all cases of insomnia.

Preparation and dose.—Tannate of cannabine. Dose, 0·1 to 1·3 grammes.

CAROBA.

The leaves of Jacaranda caroba, a native tree of Brazil, belonging to family, Bignoniaciæ.

Therapeutical uses.—It is used by the natives for syphilitic affections of all kinds, and has the character of an alterative, diuretic, and sudorific. The attention of foreign physicians was drawn to it, and its efficacy substantiated.

Edson (Chicago) and Het (Hamburg) bear testimony to its value in syphilitic skin disease, and after consequences of the disease.

Preparations.—Used by natives in decoction, 8 grammes of leaves with 360 of water, taken daily. Syphilitic ulcers were sprinkled with powdered leaves and baths taken of the decoction. The fluid extract is well known in America.

CASCA.

The bark of Erythrophlœum guinense, a leguminous tree growing in Guinea.

Chemistry.—It contains an alkaloid erythrophlocine.

Therapeutical uses and action.—The powdered bark is a stimulant causing violent sneezing. It exerts an action on heart, and has been used in mitral disease, and cardiac dropsy.

Preparation and dose.—The tincture—1 to 10 of recti-spirit—may be given in doses of 5 to 10 minims.

CARDOL, $C_{42} H_{31} O_4$.

An oily fluid obtained from pericarp of Anacardium occidentale—Cashew nut.

It is a vesicant.

Physiological action.—When applied to the skin a slight burning sensation is first perceptible. After a few hours the skin becomes white, surrounded by a reddish circle, afterwards followed by the raising of vesicles. It excites hyperæmia of skin.

Chemistry.—Cardol is a yellow oily liquid insoluble in water and soluble in alcohol and ether; not volatile. The shell of this cashew nut contains 90 per cent. of a fatty acid, anacardic acid, and 10 per cent. of the oily fluid cardol, which is extracted by means of ether.

Therapeutical uses.—In India it is used as an outward application in leprosy, and internally it has been given as a vermifuge.

Preparation and dose.—A tincture is made—1 to 10 of rectified spirit. Dose 2 to 10 minims.

CASCARA AMARA.

A bark obtained from one of the varieties of the Picramnia, N.O., Simmabaceæ.

Therapeutical uses.—It has been employed in the treatment of syphilitic affections, in anæmia. Alterative and anti-syphilitic properties are claimed for it. It was brought into particular notice by Professor Atkinson, of Baltimore, who has employed it largely in syphilitic affections.

Preparations and doses.—Fluid extract, dose, 30 to 60 minims.

CASCARA SAGRADA.

The bark of Rhamnus purshiana, nat. order, Rhamnaciæ, a small tree indiginous to the Pacific coast of North America. Its name is derived from the distinguished botanist, Frederick Pursh.

Chemistry.—Contains red and light yellow resins, tannic, oxalic and malic acids, starch and a crystallisable body.

Therapeutical actions.—Useful in habitual constipation, associated with an adynamic condition of the alimentary canal, in dyspepsia, in portal congestion, and in all cases where it is desired to promote intestinal secretion.

Physiological action.—It is presumed to act on the pneumogastric and sympathetic supplies of the primæ viæ aiding the general process of digestion.

Preparations and doses.—1. A decoction is prepared, half an ounce bark to half a pint of water.

2. Cascara cordial (Parke, Davis, & Co.), one teaspoonful to a tablespoonful according to age.

3. Fluid extract. Dose 10 to 15 drops three or four times a day, for children, 2 to 5 drops.
4. Solid extract in pill dose from 2 to 8 grains.

CASTANEA VESCA.

The leaves of the Spanish chestnut, officinal in the United States Pharmacopœia.

Therapeutical uses.—It is a favourite and popular remedy for whooping cough, and has also been employed in catarrhal affections of the chest. It produces free expectoration and sometimes vomiting if freely used.

Preparations and doses.—1. Decoction 1½ ounces of the leaves to a pint of boiling water, strain ; dose—may be given freely.

2. Fluid extract, dose 10 to 30 drops for children under 1½ years every 2 or 4 hours, for older children, half to one drachm.

CHIONANTHUS VIRGINICA.

The root bark of this plant which grows in the United States, commonly known as the fringe tree or snow flower.

Therapeutical uses.—It is useful in hepatic affections, torpidity of the liver, jaundice, enlarged liver, and tonic dyspepsia. Its cholagogue properties have been tested by Dr. Heming (Claremont) and Dr. Blackeby (Kentucky) who speak highly of it.

Preparations and dose.—Fluid extract. Dose, 10 to 30 drops, 3 times a day.

CHAULMOOGRA OIL.

Oil prepared from the seeds of Gynoeardia odorata, N.O. Pangraeiæ, growing in India. The oil contains an active principle called gynoeardic acid. The oil is obtained by a cold and hot method. It is frequently adulterated with cheaper oils.

Therapeutical uses.—It has long been used in India as a remedy for leprosy. It has been tried for phthisis, scrofula, lupus, psoriasis. Its use is specially indicated in leprosy and in syphilitic sores and gonorrhœal rheumatism, Its action is alterative.

Preparation and doses.—It may be administered internally in 2 to 10 grains in hot milk, cod-liver oil, or in capsules.

Externally it is applied in simple state, or may be made into a liniment with some other adjunct, as chloroform. An ointment is made of 1 oz. of the oil to 3 oz. of petroleum cerate.

CHEKEN.

An evergreen shrub indigenous to the central provinces of Chili, resembles the common myrtle, it is called Myrtus chekan, or cheyken.

Therapeutical uses.—According to Dr. Dessauer, it is a tonic expectorant and diuretic, with antiseptic properties. It has been tried in bronchitis, catarrh of bladder and other affections of mucous membrane. Dr. Murrell (London) tried it in winter cough, and reported favourably on its action.

Preparations and doses.—The fluid extract is made according to strength for extracts given in United States Pharmacopœa. Dose ½ to 1 drachm.

The fluid extract of Parke, Davis is made by macerating the drug in a 75 per cent. alcoholic menstruum and then submitting to hydraulic pressure. Dose 1 to 3 fluid drachms. Infusion, 1 part of leaves to 10 of water, used for injections and inhalation.

COCA.

The leaves of Erythroxylon coca, growing plentifully in Bolivia and Peru.

Physiological action.—It increases the heart's action and pulse, and stimulates digestive organs. It checks waste, and is thus an indirect nutrient. It appeases thirst.

Therapeutical action.—In Peru the leaves are used to appease hunger and thirst, and hence it has been used by persons running, jumping, or mountain climbing. In America it is used as a remedy for dipsomania and the opium habit. It restrains tissue metamorphosis, the amount of urea being diminished. It has been recommended in wasting diseases, as phthisis, and in convalescence from acute disease. It contains an alkaloid, cocaine. Muriate of cocaine has lately come into use as a local anæsthetic for delicate mucous surfaces. Whilst it has been successfully tested on the different mucous surfaces of the ear, nose, mouth, urethra, vagina, and rectum, it has been principally used as a means of causing anæsthesia of the eye, and in such application has been successfully used by operators both in Germany and the United States, and by several surgeons in this country. For this especial purpose its use and success were shown in several operations performed at the Ophthalmic Congress recently held in Heidelberg. Numerous cases show that the application of a few drops of a 2 per cent., or, better, of a 4 per cent. solution of muriate of cocaine to the eye causes, within about fifteen minutes from the first application, anæsthesia of the conjunctiva, cornea and surroundings. The action of the muriate of cocaine is similar upon the mucous surfaces of other organs, and gives rise to no unpleasant symptoms. It will thus be seen that in this preparation we possess an invaluable agent for producing a safe and satisfactory local anæsthesia of parts intensely sensitive.

Preparations and doses.—An infusion is made of 30 grains of the leaves to 6 ounces of water. Pharmaceutists have introduced several preparations :—

1. Coca wine, dose 1 wineglassful.
2. A liquid extract is made in the United States, the dose of which is ½ to 2 drachms.
3. A hydrochlorate of cocaine, dose ½ to 1 grain.
4. Pastilles of the extract, containing 2½ grains, are also made. Dose, one every 3 or 4 hours.

COLA.

The seeds of Sterculia acuminata, a tree growing in West Africa.

Therapeutical action.—Cola seeds have been used by the inhabitants of Cape de Verde and by the negroes of Jamaica, the latter employing them as a remedy for drunkenness.

They have the property of exciting wakefulness, and of sustaining the strength. Still more, they are said to abate the drink crave. They are also useful in making food or drink palatable, and as a tonic for the digestive tract.

Chemistry.—According to Haeckel and Schlagdenhauffen they contain more caffeine even than coffee, also theobromine, starch, glucose, and, according to Hadfield, a volatile oil.

Preparation and dose.—The seed is ground into a paste with water or rum · a nut thus administered to a drunken negro is said to restore wakefulness in 15 to 20 minutes.

CONVALLARIA MAJALIS.

The leaves and other parts of the Lily of the Valley.

Therapeutical action.—It has long been used as a remedy in Russia for dropsy.

According to Botkin, St. Petersburg, it is a valuable remedy in organic and functional diseases of the heart. Troitzky and Bogajawlensky have established some of the effects of an infusion of the plant. In its action it equals digitalis without accumulation. Germain Sée has confirmed the observations of the Russian physicians, and it is now regarded as a useful adjunct in the treatment not only of heart disease, but of affections dependent upon heart mischief.

Chemistry.—Two glucosides have been found, and according to Martin an alkaloid named maraline.

Preparations and dose.—An infusion is made of 10 grains of the flowers to 6 ounces of water.

An extract of the flowers and stems is prepared, the dose of which is 2 to 8 grains.

A tincture, strength 1 to 8 of proof spirit, the dose of which is 5 to 30 minims.

COTO BARK.

The bark of one of the family Lauraceæ.

Therapeutical uses.—It has been tried for diarrhœa, colic, toothache, and gout. It is a valuable remedy in checking the diarrhœa and night-sweats of phthisis.

Preparations and doses.—1. Tincture, prepared, 1 to 10; may be given in doses of 10 minims in mucilage every two hours. 2. Fluid extract, dose 5 to 8 minims.

COTTON ROOT.

The root bark of the cotton plant, the Gossypium carbadense.

Therapeutical action.—The fresh inner bark is emmenagogue, parturient and abortive; it is said to promote uterine contraction with as much efficiency and more safety than ergot. It has been used in chlorosis, amenorrhœa, &c. It has long been employed by the negroes of the Southern States to procure abortion.

Preparations and doses.—The fluid extract of Parke, Davis, & Co. may be given in doses of 1 to 4 drachms. A tincture is prepared—1 to 4—dose 1 drachm. A decoction is made with 4oz. root bark to 40 of water, boiled down to 20 ounces; a wineglassful every half hour.

CROTALUS.

The poison of the rattle snake, obtained from Crotalus horridus.

Physiological action.—Inoculation causes ecchymoses and hæmorrhages, by putting an end to the coagulating power of the blood, with febrile heat, anorexia, injected conjunctiva, &c.

Therapeutical uses.—It was originally introduced by homœopaths, and has been employed for malignant hæmorrhagic scarlatina, on the principle "similia similibus curantur."

Preparations and doses.—The poison bag is removed from the living vipers, and then mixed with glycerine as a preservative. Crotalus is prepared in decimal strengths, the menstruum used being 1 part of glycerine to 3 of proof spirit; the 3rd decimal dilution is chiefly used.

Dr. Hayward, of Liverpool, prescribed 3 drops in a spoonful of water, every three or four hours, in malignant hæmorrhagic scarlatina. It is also used hypodermically in doses of 1 to 3 minims.

CYPRIPEDIN.

Extract of the root of Cypripedium pubescens. N.O. Orchidaceæ.

Therapeutical action and use.—It has been employed in nervous affections. Epilepsy, hysteria.

Preparation and dose.—A pill to be made with tragacanth. Dose, 1 to 2 grains.

CANUTILLO.

The stems of Ephedra tufurca, growing in the United States.

Therapeutical uses.—It has long been a popular remedy, amongst the native Indians of Texas, for gonorrhœa and renal diseases. It has also been employed in leucorrhœa and relaxed conditions of the mucous membranes.

Preparation and dose.—Fluid extract. Dose ½ to 1 drachm.

DAMIANA.

The leaves and stem of Turnera aphrodisiaca, growing in Mexico. N.O. Turneraceæ.

Therapeutical uses.—It is a nervous stimulant and tonic. Its aphrodisiac powers have been long in repute in Mexico, and it has been much vaunted as a remedy for impotence.

Preparation and dose.—Ext. damianæ liquid. Dose ½ to 1 drachm.

DELPHINIUM.

The plants Delphinium staphisagria and Delphinium consolida, growing freely in Great Britain, commonly called stavesacre, and larkspur.

Chemistry.—An alkaloid, delphinia, has been obtained from the seeds. It is a browny-white colour, insoluble in water, soluble in alcohol and ether.

Therapeutical action.—An infusion of the plant has been employed as an insecticide against pediculi, and as a dressing for wounds, buboes, &c.

The alkaloid has been tried in dropsy, spasmodic asthma, and as a local application in various neuralgic affections.

Preparation and doses.—1. Infusion.—Flowers 3 parts, water 100 parts, used as a wash.

2. Lotion.—Delphinia 10 to 20 grains, rectified spirit 1 ounce.

3. Pill.—Dose ¼ to ½ grain, every three or four hours.

EMBLICA.

The fruit of Myrabolanus emblica—Emblica officinalis.

Therapeutical uses.—It is diuretic and laxative, and has been found useful in atonic dyspepsia and habitual constipation.

It is used in India for the above purpose.

Preparation and dose.—Confection. Dose 1 to 2 teaspoonfuls.

ERGOTININE.

An alkaloid discovered by Tanret in 1875.

Therapeutical action.—The ordinary action of ergot, but intensified. The small dose produces strong and permanent contractions in a very short space of time. It is valuable in every kind of hæmorrhage, post-partum hæmorrhage, uterine hæmorrhage, hæmoptysis, hæmatemesis, epistaxis, &c. It may also be used advantageously in typhoid fever, as it lowers the temperature and acts on the circulation, diminishing the pulse. It is more powerful than ergotine.

Mode of preparation and dose.—The alcoholic extract of ergot is heated with acid. sulph. dil., using ether to free sulphate from fatty matter. One pound of ergot yields 3 grains of ergotinine.

Hypodermic dose.—5 to 10 minims of a solution containing 1-50 grain in 50 minims.

A solution and syrup are sold by Tanret (agent Wilcox and Co., Oxford Street, London).

The strengths are:

Solution.—1-60 grain to 20 minims. Hypodermic dose, 3 to 10 minims.

Syrup.—1-240 grain to drachm. Dose from 1 to 4 teaspoonfuls.

ERIGERON CANADENSE.

An annual indigenous to the Northern parts of the United States of America. N.O. Compositæ, commonly called Flea bane.

Therapeutical uses.—It is of use in dropsical complaints and diarrhœa. Its properties are tonic, diuretic, and astringent. A volatile oil distilled from the fresh flowering herb is officinal in the States, and has been recommended as a hæmostatic.

Preparation and dose.—1. Fluid extract.—Dose, ½ to 1 drachm.

2. Oil.—Dose, 5 drops.

ERIODICTYON GLUTINOSUM.

An evergreen shrub, natural order, Hydrophyllaceæ, growing on the mountains of Southern and Central California and Northern Mexico.

Therapeutical uses.—The plant has been long used by Spaniards and Mexicans as a remedy for lung diseases. It has been popularly called consumptives' weed, yerba santa, or bear's weed.

It has also been employed as a remedy for rheumatism and paralysis, and has been found useful in bronchitis.

Preparation and dose.—Tinct.—4oz. of the leaves to 20 of alcohol. Dose 1 to 2 drachms.

EUCALYPTUS.

Two varieties of Eucalyptus are used, Eucalyptus globulus—blue gum—and Eucalyptus rostrata, or red gum. The tree grows plentifully in Australia.

Therapeutical uses.—The antiseptic properties of the blue gum tree have long been recognised in Australia, and its properties tested in agues, malarial fevers, and in affections of the chest. It has also been used in diphtheria, leucorrhœa, dysmenorrhœa, and has become popular as a dressing for wounds, or eczema. It has been planted in malarious countries, but according to Tommasi Crudeli its anti-malarial properties have been over-valued.

Administered internally in large doses it paralyses the spinal cord and medulla. The pulse and temperature are lowered and the excretion of urea increased.

The red gum, Eucalyptus rostrata, possesses powerful astringent properties, and has been employed in relaxed conditions of throat and mucous membranes.

Preparations and doses.—I.—Eucalyptus globulus.

1. Eucalyptus oil. This is a distillate from the leaves. The properties of the blue gum tree are largely due to this volatile oil. The oil is used for inhalations in phthisis and diphtheria in doses varying from 10 to 60 drops. Internally, doses vary from one to five minims. The oil is frequently adulterated.
2. Eucalyptine. A distillate from green fresh leaves with active principle in a more volatile form; recently introduced by Burroughs, Wellcome, and Co.
3. Tincture of eucalyptus. Dose 15 to 60 minims.
4. Eucalyptus gauze.
5. Ointment.
6. Pessaries.
7. Bougies.
8. Candles (Dr. Wright).

The last five preparations can be obtained from any of the pharmaceutists in strength as required.

II.—Eucalyptus rostrata. The inspissated secretion from the red gum tree is used.

1. Liquid extract. Dose 30 to 60 minims.
2. Syrup (Squire). Dose 30 to 60 minims.
3. Tincture (Squire). Dose 20 to 40 minims.
4. Lozenges. Dose 1 grain.
5. Pill. Dose 2 to 6 grains.

EUPHORBIA PILULIFERA.

An annual plant growing in Queensland and New South Wales. N.O. Euphorbiaceæ.

Therapeutical uses.—It has long been a favourite domestic remedy in Australia for colds, coughs, for all diseases of the respiratory tract. In asthma its use has been attended by great relief of the more urgent and distressing symptoms.

Preparation and dose.—1. Fluid extract, prepared according to the United States Pharmacopœia. Dose $\frac{1}{2}$ to 1 fluid drachm.

2. Decoction.—One ounce of the herb to two quarts of boiling water. Dose.—A wineglassful three times a day.

EUONYMUS.

The powdered extract, obtained from the bark of the root of Euonymus atropurpureus. N.O. Celastraceæ.

Therapeutical uses.—Rutherford has established this drug as a powerful hepatic and as a feeble intestinal stimulant. It possesses tonic and cathartic properties. It is now commonly used as a cholagogue, rivalling podophyllin.

Preparation and dose.—1. Pill.—Various combinations are offered by pharmaceutical chemists. Dose $\frac{1}{2}$ to 5 grains.

2. Tinct.—10 to 40 minims.

FOWLWORT.

The plant Tradescantia erecta, N.O. Commelynaceæ, growing in Mexico.

Therapeutical uses.—It has been long employed by the natives as a styptic. Its efficacy has been tested, and it is said that its action is as powerful as perchloride of iron.

Preparation.—It is crushed by the natives, or chewed, and then applied to bleeding surfaces.

FRANCISCA.

The plant Francisca Uniflora. N.O. Scrophulariaceæ, growing in the Brazils, otherwise called Manaca.

Therapeutical uses.—It is said to possess powerful alterative and anti-syphilitic properties, and has thus largely been used in the treatment of buboes, chancres, syphilitic skin affections, &c.

Preparation and dose.—Tincture. Dose 5 to 20 drops.

FRANKENIA GRANDIFOLIA.

An herbaceous plant growing at the foot of the coast range of mountains, California. N.O. Frankeniaceæ, also known as Yerba rheuma.

Therapeutical uses.—It has been employed as a local application in various diseases, as chronic nasal catarrh, ozæna, gonorrhœa, leucorrhœa, and reports are favourable as to its value. It has also found a use in the treatment of skin diseases, as eczema, lichen, &c. It has also been used internally in diarrhœa and dysentery.

Preparation and dose.—Fluid extract. Used as lotion or injection in many combinations.

℞ Fluid ext. Franken., ℥ss.;
Aquæ distill., ℥iiss. Dose 10 to 20 minims.

2. Tincture. Dose 30 to 60 minims.

FUCUS.

Sea-wrack, or Sea-weed. N.O. Algæ.

Therapeutical uses.—A popular nostrum called "anti-fat" has been the means of drawing attention to this agent as a remedy for corpulence. The evidence as to its value is variable, and we think it will be found that, where it has done good, other factors must be accredited with a large share in the reduction of weight.

Preparation and dose.—1. Liquid extract. Dose 1 to 2 drachms.

2. Extract.—3 to 8 grains before meals.

GALIUM APARINE.

The annual plant Galium aparine, growing abundantly in England in the hedgerows. N.O. Rubiaceæ.

Therapeutical uses.—It has been recommended by Dr.

Wynn for such skin affections as lichen, lepra; and by Dr. Quinlan for the treatment of ulcerated legs. Its stimulating action leads to healthy granulations· Dr. Wynn administered it internally, in which form it is not so easy to explain the *rationale*.

Preparation and dose.—1. Decoction.—3 ounces of the plant to a quart of boiling water. Dose, 3 ounces three times a day.

2. Fluid extract. Dose 1 to 4 drachms.

3. Dr. Quinlan prepared a paste by pounding the fresh plant in a mortar, to be applied three times a day.

4. Succus Galii aparin. (Allen & Hanburys). Dose from one fluid ounce.

5. Unguent. (Allen & Hanburys).

GARCINIA.

The fleshy fruit from Garcinia Indica, N.O. Guttiferæ, called Kokum butter.

Therapeutical uses.—A white, greasy oil is expressed from seeds, and has been used as a basis for ointments.

GELSEMIUM.

The root of Gelsemium sempervirens, yellow jasmine, growing in the United States. N.O. Loganiaceæ.

Physiological action.—According to Farquharson moderate doses produce redness of the conjunctiva, pain in eyelids, contraction of pupils and ptosis; whilst large doses cause vertigo, double vision, and ultimately paralysis of the sensory columns of the cord. Heart's action is slightly weakened, and temperature is lowered.

Therapeutical uses.—It is an excellent remedy in neuralgia of face and jaws, associated even with carious teeth, and has been found useful in tetanus.

Topically applied, it dilates the pupil, whilst taken internally it contracts it.

Chemistry.—It contains an alkaloid, gelsemia, a yellow-brown amorphous powder, soluble in alcohol or ether, but sparingly soluble in water, and an acid, "gelsemic acid."

Preparation and doses.—1. Tincture.—1 ounce root to 10 ounces of proof spirit. Dose 5 to 30 minims.

2. Pill, made of the powdered extractive of the root called gelsemin. Dose ½ to 2 grains.

3. Hydrochlorate of the alkaloid gelsemia. Dose 1-160th to 1-20th of a grain. A $\frac{1}{6}$ of a grain has caused death.

GEOFFROYA.

The bark of Geoffroya thermis, growing in the West Indies, commonly called bastard cabbage bark. N.O. Leguminosæ.

Therapeutical uses.—It has been long employed in Jamaica as a vermifuge; in large doses it produces vomiting, nausea, purging, &c.

Preparation and dose.—1. Decoction.—1 ounce of the bark to 2 pints of boiling water. Dose 2 to 4 drachms for three mornings, followed by a dose of castor oil.

2. Tincture.—2 ounces bark to 1 pint of proof spirit. Dose 30 drops three times a day.

GLONOINE.

The well-known and dangerous explosive, nitro-glycerine. It was first introduced by Dr. Herg, of Philadelphia, in 1850, and has been largely used under this name by homœopathic practitioners.

It is prepared by dissolving glycerine in nitric and sulphuric acids. For medical purposes it is dissolved and diluted in alcohol.

Physiological action.—Like nitrite of amyl, it is a prompt and powerful excitor of vaso-motor action; it accelerates pulse, relaxes arteries, and quickens heart's action; it causes a general sense of fulness. Dr. Hughes regards it as a direct sedative of the medulla oblongata, and denies that vascular activity generally throughout the body is quickened. He admits the throbbing sensation in the head produced by a five per cent. solution.

Therapeutical uses.—It has been recently used by the regular school in angina pectoris, sea-sickness, neuralgia, Bright's disease, headache, myxœdema, epileptic vertigo; having been previously employed by the homœopaths in congestive headache, sunstroke, and disturbances of the intra-cranial circulation obtaining in the menopause and after menstrual suppression.

Preparation and doses.—1. Solution. 1 per cent. Dose ½ to 2 minims.
5 ,, ,, unsafe.
10 ,, ,, unsafe.

2. Oil. 1 per cent. Dose 1 to 2 drops
3. Pills. $\frac{1}{100}$ to $\frac{1}{50}$ of glonoine to grain.
4. Tablets. $\frac{1}{100}$ of a grain each. One every two, three, or four hours.

GOANIA.

The climbing shrub Goania Domingensis, growing in the West Indies. N.O. Rhamnaceæ.

Therapeutical uses.—It has been employed in gonorrhœa, dropsy, debility, and as a dentifrice. It excites the salivary glands.

Preparations and doses.—1. Fluid extract. Dose ½ to 1 drachm.

2. Tincture.—4 ounces of bark to 1 pint of proof spirit Dose ½ to 2 drachms.

GRINDELIA.

The dried herb Grindelia robusta. N.O Astrioidæ· Growing in California. N.O. Compositæ.

Therapeutical uses.—It has been largely used for asthma, affections of mucous surfaces, vaginitis and uterine diseases. Cloths saturated with fluid extract are used as a topical application in iritis.

It has also proved useful in whooping-cough.

Preparations and doses.—1. Extract. Dose 2 to 3 grains three times a day.

2. Extract. Grindeliæ liquid. Dose ½ to 1 drachm.

GUARANA.

The seeds of Paullinia sorbilis, growing in Brazil. N.O. Sapindaceæ.

Chemistry.—It contains an active principle called guaranine, tannin, gum, extractive matter, &c.

Therapeutical uses.—It contains an alkaloid somewhat similar to, and possessing the same properties as theine, hence it has been employed for the prevention and cure of nervous headache.

It has been found useful in diarrhœa and dysentery.

Preparation and doses.—1. Extract guaranæ fluid.—Dose 10 to 30 minims.

2. Pulv. guaranæ.—Dose 20 to 30 grains.
3. Tincture.—Dose ½ to 1 drachm.
4. Elixir.—Dose 1 drachm.
5. Guaranine.—Dose ½ to 5 grains.

HAMAMELIS.

The bark and leaves of Hamamelis virginica, a plant growing in Canada and the United States, commonly called witch-hazel, or winter bloom. N.O. Hamamelaceæ.

Therapeutical uses.—It has long been used by the homœopaths for injections in uterine hæmorrhage, in hæmorrhoids, and for the last few years has been adopted by all classes of practitioners. Its astringent properties have been tested in general affections of the mucous membranes and in hæmorrhages. It has been employed in epistaxis, hæmoptysis, hæmatemesis, menorrhagia, hæmorrhoids, hæmaturia, bruises, wounds, &c.

Preparations and doses.—1. Tincture.—1 ounce of the bark to 10 of proof spirit, dose 2 to 5 minims.
2. Lotion.—1 drachm of the tincture to 1 ounce of water.
3. Pill.—A half to two grains of the powdered extract.
4. Plaister.
5. Ointment.—1 part of the tincture to 10 simple ointment.
2. Fluid extract.—Dose 1 to 2 drachms.

HAZELINE.

A distillate of the witch-hazel, an elegant and efficacious product of the Hamamelis virginica, introduced by Burroughs, Wellcome & Co. As the activity of the plant depends principally upon volatile principles, which are, of course, injured or lost in the process of drying the bark, this preparation offers advantages over the ordinary tincture. It is pronounced by many eminent physicians unequalled for contusions, sprains, swellings, and inflammatory conditions generally, especially of the mucous membrane and skin, Its medical properties are anodyne, sedative, styptic, tonic, astringent, and antiseptic. Owing to its influence upon the circulatory system many physicians advise its internal administration in most cases where it is applied locally, especially in hæmorrhoids.—*Vide* HAMAMELIS.

HEDERINE.

An alkaloid obtained from Hedera Helix. N.O. Ataliaciæ; commonly called Ivy gum.

Therapeutical uses.—It possesses febrifuge properties, resembling quinine in its action, and has also been used as an emmenagogue.

Preparation and dose.—Hederine, ¼ to 2 grains.

HENNA.

The dried leaves of Lawsonia inermis, growing in Arabia. N.O. Salicariæ.

Therapeutical uses.—It has been valued by natives as a stimulant to liver, and for this purpose has been employed in jaundice.

Preparation.—Fluid extract. Dose 5 to 10 minims.

HOANG NANG.

The bark of a creeper growing in China. N.O. Loganiaciæ.

Therapeutical uses.—It has been long employed by the Chinese as a remedy for snake bites, leprosy, and other skin diseases.

HOMATROPINE.

An alkaloid obtained by action of hydrochlorates on benzo-glycolic acid.

Therapeutical uses.—It has been much employed by oculists. In solution it paralyses the ciliary muscles, widening the pupil. Its action disappears in a few hours.

Preparation and dose.—Homatropine, 1-100th to 1-20th grain.

HYPERICUM.

The small perennial plant Hypericum perforatum, commonly called St. John's wort.

Therapeutical uses.—It has been long known as a domestic remedy for dysentery, gravel, hæmorrhages, chest complaints, worms, jaundice, wounds, bad legs. It is an astringent and antiseptic. It contains a volatile oil and resin.

Preparations and doses.—The fresh leaves may be bruised and applied to ulcers, or the flowers may be macerated in olive oil in the proportion of 4 oz. to a pint of olive oil.

2. Infusion. Dose 2 to 4 drachms.

HYPODERMIC PREPARATIONS.

Pharmaceutists furnish hypodermic medications in a variety of forms useful in a large class of cases. Discs, solutions of definite strength, gelatine preparations are thus ready to hand, in small compass, very suitable for hospital work and for country practitioners. Compressed hypodermic tablets are now prepared (according to the Wyeth process) in a very superior manner. They dissolve readily in a few drops of water, upon being crushed by the aid of a small glass mortar and pestle. These hypodermic tablets offer great advantages, owing to their permanency, compactness, and the perfect accuracy which is attainable in treating large quantities of material at a time. By their use the physician is enabled to carry, in the dimensions of an ordinary hypodermic case, from six to twelve varieties of medication, together with the syringe, mortar, and pestle.

Burroughs, Wellcome & Co. make specialities, as follows in compressed tablets:—

Atropiæ sulphas, 1-180, 1-200, 1-250, 1-60, 1-100 gr.
Morphiæ sulphas. 1-3, I-4, 1-8, 1-12, 1-3 gr.
Strychniæ sulphas, 1-60, 1-100, 1-150 gr.
Apomorphia. 1-10 gr.
Aconitia, 1-130, 1-260 gr.
Digitalin, 1-100 gr.
Hydrarg. perchloride, 1-60, 1-30 gr.
Morphiæ Bimeconate, 1-8, 1-6, 1-4, 1-3 gr.
Pilocarpine, 1-2, 1-4, 1-10 gr.

Allen and Hanburys offer solutions. The following are the chief solutions prepared by that firm:—

5 ♏ contain.
Acetic acid, ½ gr.
Aconitine, 1-120 gr.
Ammonia, 1 gr.
Apomorphine, 1-20 gr.
Arsenic, 1-25 gr.
Atropine salicylate, 1-120 gr.
Atropine sulphate. 1-128 gr.
Atropine and Morphine, 1-180 & 1-8 gr.
Caffeine, ½ gr.
Chloral, 3 grs.
Conine, 1-20 gr.
Curare, 1-10 gr.
Daturine, 1-120 gr.
Digitaline, 1-100 gr.
Digitaline and atropine, 1-120 & 1-120 gr.

5 ♏ contain
Digitaline and Morphine, 1-120 & 1-8 gr.
Ergot (purified), 2 grs.
Eserine salicylate, 1-120 gr.
Gelsemine, 1-60 gr
Homatropine, 1-500 gr.
Hyoscyamine, 1-120 gr.
Mercury bichloride, 1-20 gr.
Morphine acetate, 1-4 gr.
Morphine sulphate, 1-4 gr.
Picrotoxine, 1-120 gr.
Pilocarpine, 1-20 gr.
Quinine, ½ gr.
Strychnine. 1 120 gr.
Veratrine, 1-20 gr.

Savory and Moore make up gelatine discs or wafers, as follows :—

Aconitia, 1-60 gr.
Apomorphia, 1-120 gr.
Atropia sulph., 1-120, 1-60, 1-10 gr.
Codeia, 1-4 gr.
Curara, 1-10, 1-20 gr.
Daturin, 1-120 gr.
Digitaline, 1-100 gr.
Ergotine, 1-4 gr.
Mercury perchloride, 1-16 gr.
Morphiæ acet , 1-6 gr.
Morphiæ tart., 1-8, 1-6 gr.
Morphiæ bimeconat., 1-6.
Picrotoxine, 1-120 gr.
Pilocarpine 1-12, 1-6 gr.
Strychnia nit., 1-25, 1-50 gr.

HYPODERMIC MEDICATIONS have been found useful in the following class of cases :—

Apoplexy has been successfully treated by subcutaneous injections of ergotine in the arm.

Bubo has been aborted by injecting carbolic acid into the centre of the swelling.

Carcinoma. Acetic acid, one part to three of water, injected, has proved successful in shrivelling the tumour and obviating an operation.

Chloroform-poisoning.—One-tenth grain of digitaline, hypodermically, followed an hour afterward with one-tenth grain of atropia in similar manner, has been successful.

Chorea. Curare, in hypodermics of from one-twentieth to one one-fortieth of a grain daily, has been found valuable in this disease

Convulsions (Infantile). Morphia injections, with inhalations of three drops of nitrite of amyl immediately following, have proved succesful.

Convulsions (Puerperal). Chloral subcutaneously has been pronounced better than when swallowed.

Congestive Chills. Ten drops of tinct. belladonna, hypodermically, every fifteen minutes, until the pulse became distinguishable, succeeded where the patient was unconscious and unable to swallow, followed by hypodermics of quinine, brandy, or whisky.

Croup. Sulphate of atropia, one per cent. solution, has proved successful in a desperate case, injected in the neck on level with pneumogastric. Three drops repeated after four hours.

Croup (Membranous). Equal parts of water and sol. ferri perchlor. injected into the trachea, piercing the needle through just below the thyroid cartilage, dissolves the membrane, enables its expectoration, and substitutes tracheotomy.

Dysentery. Morphia, hypodermically, in one-third-grain doses, has been found more rapid in relieving tenesmus than any other opiate.

Eclampsia (Puerperal). Veratrum viride, two to four drops of the tincture, subcutaneously, as required to keep the pulse down to about sixty. Pilocarpin, two per cent. solution, is also recommended.

Eczema. Arseniate of soda, hypodermically, in solutions of one-fifth, one-half, and one per cent., commencing with ten minims of the weaker, and gradually increasing, is recommended.

Enuresis (Nocturnal). Two very small doses of the nitrate of strychnia, injected in the vicinity of the rectum at suitable intervals, have proved successful.

Epilepsy. Curare in solution, two grains in twenty-five minims of water, with two drops hydrochloric acid. About once a week inject about four drops beneath the skin. It has cured cases of several years' standing within two months.

Erectile tumours have been successfully treated by injections of perchloride of iron and chloride of sodium in solution, the tumour to be surrounded by a ring.

Erysipelas. Carbolic acid, three per cent. solution, eight or ten injections at the same time, so as to surround and cover the inflamed regions; also salicylic acid in the same manner.

Foreign Body in Œsophagus. Threatened strangulation from impaction of gullet has been promptly relieved by inducing vomiting. Apomorphia, one-tenth grain hypodermically. Emetina is also suggested in the same way.

Fractures, Ununited. Glacial acetic acid, five to ten minims, between ends of the bones with hypodermic syringe. Iodine has also succeeded, used in same way.

Goitre has been succesfully treated by subcutaneous injections of ergotine, one-third, gradually increased to one grain.

Hæmoptysis. Sclerotinic acid (substitute for ergotine), five per cent. solution injected in the neck or arm.

Hæmorrhages. Hæmoptysis, hæmatemesis, and uterine hæmorrhages have all been arrested by hypodermics of ergotine and ergotinine. If pain, add morphia.

Hernia is more easily reduced by giving a hypodermic of morphine with or without atropia.

Hiccough. In an obstinate case, resisting all other means, three-eighths grain of chlorohydrate of pilocarpin, hypodermically, quickly proved successful.

Hydrophobia. Much amelioration of the symptoms has followed hypodermics of curare.

Obstruction of the Bowels. Aloin has been used with success, subcutaneously, tomove the bowels.

Opium-poisoning. Quite rapid recovery is reported to have followed warm hypodermics of fluid extract coffee, in thirty-minim doses. Caffein citrate and sulphate atropiæ are also considered antidotes to opium.

Perspiration (Arrest of). Pilocarpin, the alkaloid of jaborandi, will cause more or less profuse sweating, according to amount injected beneath the skin.

Polypus (Nasal). Carbolic acid, one part; glycerine, four parts; twenty drops sunk into tumour by means of hypodermic syringe effectually dissipated polypus in some cases reported.

Retention of Urine from paralysis of the bladder, accompanying typhus, variola, and hydrocephalus, has been promptly overcome by hypodermics of ergot in the fossa behind the great trochanter.

Skin diseases caused by Animalculæ. Sulphuric, carbolic, salicylic, or sclerotinic acid, hypodermically, as in erysipelas.

Snake-bites. Ammonia, brandy, carbolic, or salicylic acids are all recommended hypodermically, in case of snake poison, and have been injected with benefit directly into a vein.

Strychnia-poisoning. Caffein, one grain, hypodermic; alcohol in same way is also suggested; chloral injections are also mentioned.

Surgical Shock. Quinine, six grains, hypodermically, with one-third grain of morphia.

Suspension of Salivary Secretion. Pilocarpin excites salivation.

Sweats (Night). Atropine has given good results in injections of about one-fortieth of a grain at bed time.

Syphilis has been treated most successfully by solutions of some of the mercurials injected locally.

Tetanus. Chloral hydrate is recommended in conjunction with chloroformization, alternating it with other powerful anodynes and antispasmodics.

Trichinosis. Tincture of ergot and ergotine have effected speedy cures, hypodermically, into muscles affected.

Tumours. Just before removal a hypodermic of half a grain of morphine, with a thirty-sixth grain of atropia directly into the growth.

Urticaria. Saturated solution of bisulphite of soda, injected directly into the part affected.

HYDRASTIS.

The small perennial herb Hydrastis Canadensis, commonly known as golden seal. N.O. Ranunculaceæ.

Therapeutical uses.—It is strongly recommended in inflammation of the mucous membranes, so that it has a very general application. It has also been employed for the treatment of chronic ulcers, both internally and locally. It contains alkaloids hydrastia, zanthopnœia, berberia, and a resinous extract, hydrastine, possessing aperient, cholagogue, stomachic and tonic properties. It has been well tested in this country in atonic dyspepsia, and inactivity of the liver.

Preparations and dose.—Tinct. 1 to 10 proof spirit. Dose 30 to 60 minims.

Hydrastine.—Dose.—Two to six grains.

Hydrastia.—Dose.—Half to five grains.

HYDROBROMIC ACID.

A pure, colourless, transparent liquid, without odour, but with a strong acid taste, prepared from bromide of potassium or barium with sulphurous acid.

Therapeutical uses.—It is recommended by Fothergill in some forms of heart excitement, and it is also a useful sedative in painful affections of the stomach, in nervous excitability, in insomnia, epilepsy, &c.

Preparations and doses.—1. A 10 per cent. solution. Dose 20 to 60 minims.

2. Hydro-bromate of quinine. Dose 1 to 5 grains.

HYDROCOTYLE.

The plant Hydrocotyle Asiatica, growing in India, Africa, West Indies, and Australia. N.O. Umbelliferæ.

Therapeutical uses.—It is recommended in syphilis, skin diseases, scrofula, leprosy, having alterative and tonic properties. It has been largely used in the East, locally and internally; the secretory functions increasing and the digestion improving after its prolonged employment.

Preparations and doses.—1. Powder prepared from the leaves. Dose 5 to 8 grains three times a day.

2. The hydro-alcoholic extract. Dose 10 minims.

3. A syrup. Dose 25 milligrammes.

ICTHYOL.

A distillate of bituminous substances. It somewhat resembles tar in appearance; it is miscible with vaseline, lard, oil; and is partly soluble in alcohol and ether.

Therapeutical uses.—It has been largely employed by Dr. Unna, Hamburg, and was exhibited by him at the International Medical Congress, Copenhagen. He has found it useful in eczema.

Preparations.—Dr. Unna uses an ointment varying from 20 to 30 per cent., in some cases employing it almost pure. The following is a useful formula:—Litharge, 10 parts; vinegar, 30 parts; boiled to 20 parts, and add lard, olive oil, and ichthyol, of each 10 parts.

INGLUVIN.

A preparation from the gizzard of Pullus Gallinaceus, the common domestic fowl.

Therapeutical uses.—It is recommended as a substitute for pepsine in dyspepsia, and in the morning sickness of pregnancy, in the latter of which several successful cases have been reported. In diarrhœa, cholera infantum, and marasmus, proceeding principally from faulty digestion, excellent and almost immediate results have followed its administration.

Preparation.—Ingluvin (Warner & Co.) Dose 5 to 10 grains.

IRIDIN.

A preparation obtained from the rhizome of Iris versicolor, growing in the United States. N.O. Iridaceæ.

Therapeutical uses.—It is a powerful hepatic, and takes its place between podophyllin and euonymin. It has thus been given in jaundice, and where there is a tendency to gall stones; it has also been used in the vomiting of pregnancy.

Preparation and doses.—1. Powdered rhizome, Dose 20 to 30 grains.

2. Fluid extract. Dose 10 to 20 m.

3. Iridin. Dose2 to 4 grains.

JABORANDI.

The dried leaves of Pilocarpus Pennatifolius. It owes its properties to an alkaloid Pilocarpine.

Therapeutical uses.—This remedy is described in nearly all our recent text-books—Farquharson, Ringer, and Naphey, so that we need only briefly describe its properties.

It has been employed in a great variety of diseases, as albuminuria, asthma, diabetes, affections of the eye, and Bright's disease, and in general where it is desired to produce sweating or copious perspiration, a reduction of the temperature following its use. The active principle Pilocarpine is usually employed. It is an antagonist to atropine.

Preparation and doses.—

1. Extract of jab. Dose 2 to 10 grains.
2. Fluid extract. „ 10 to 60 minims.
3. Infusion „ „ 1 to 2 ounces.
   1 ounce to a pint of boiling water.
4. Pilocarpine hydrochlorate. Dose internally, $\frac{1}{20}$ to $\frac{1}{2}$ grain. Hypodermically $\frac{1}{10}$ to $\frac{1}{3}$ grain.

JUGLANS.

The inner bark of Juglans cineria, indigenous in this country, and known as butter nut, or white walnut. N.O. Juglandaceæ.

Therapeutical uses.—It is largely used in United States, where it is much valued as a mild cathartic, operating without pain or irritation. It is especially applicable to cases of habitual constipation, dysentery, in the relief of which it has acquired considerable reputation.

Preparations and doses.—1. Juglandin the active principle, dose 2 to 6 grains.

2. *Valoid*, or equivalent fluid extract, (Burroughs and Wellcome). Dose 20 to 60 drops.

KAIRINE.

One of the more recent anti-pyretics, occurring in white granular crystals. It is a thymol derivative—the hydrochlorate of oxychinoline ethyl.

Therapeutical uses.—It has been employed in fevers and acute inflammations, as meningitis, acute rheumatism, &c. M. Drefry, of Lyons, states that it acts by lowering the activity of tissue change, and that it is an efficient febrifuge. Prof. Quinlan (Dublin) has, in *British Medical Journal*, Dec. 6th, 1884, p. 1125, brought forward evidence on its use in pneumonia, measles, scarlatina, pleurisy, erysipelas, ague, and septicæmia.

Dose.- Kairin hydrochlorate. Dose 5 to 8 grains.

KALMIA LATIFOLIA.

A shrub growing in various parts of Europe. N.O. Ericaciæ, commonly called Mountain laurel.

Therapeutical uses.—It has been recommended in small doses in the treatment of cardiac complaints, when a sedative action is desired. It is a poisonous narcotic in large doses.

Preparation and dose.—Fluid extract. Dose 2 to 5 minims.

KAVA KAVA.

A plant growing in Tahiti. The root contains a crystalline principle, kavalin, and an essential oil, with resin and starch. N.O. Piperaceæ.

Therapeutical uses.—It has been employed for gonorrhœa and other affections of the mucous membranes, on which it seems to exercise a stimulant and tonic action. It has also been used for gout and cutaneous diseases.

Preparations and doses.—1. Fluid extract, Dose 20 to 60 minims, three times a day.

2. Infusion, one drachm of the powdered root to 20 ounces of boiling water. Dose, half a pint.

KEFIR.

Kefir also known as kapir, is the name of a peculiar ferment, and of a drink produced from milk by its agency. The ferment has been known from the earliest times in the Caucasus. Dr. W. M. Dimitrejew, a physician of Jalta, was one of the first to direct the attention of scientific men to this food preparation, which appeared to him likely to be of service in localities and seasons of the year in which true koumiss is not procurable. It has been ascertained that the ferment is a compound one, consisting in part of the ordinary yeast fungus, and in part of a peculiar bacterium, to which the name of "Dispora Caucasia" has been given. The mode of preparation of the kefir is very simple, cleanliness and accuracy being the only two necessary conditions. The milk used should not be too rich, and only moderately fresh. Half a glass of the fresh kefir fungus is placed in an earthenware or glass vessel with a wide mouth, and to this is added three glassfuls of milk. The mouth of the vessel should be lightly covered with a piece of cloth. The vessel should then be kept in a room at a temperature of about 66° F., and every half hour shaken so violently that the fungus which generally floats at the top shall settle at the bottom. In this way the drink is ready in about twenty-four hours, and at the end of this time the fermented milk is poured off from the ferment, and fresh milk poured on for next day's brew. The fungus should be washed twice a week in cold water, care being taken that every particle of curd be removed. This is the ordinary kefir of the Caucasian mountaineers For the preparation of bottled kefir one glass of the above is added to two glasses of skimmed milk, and the mixture is then put into strong bottles. These are kept at the temperature of 66° F., and shaken every two hours. In this way at the end of twenty-four hours, "weak" kefir is obtained; in two days "medium" kefir, and at the end of three, "strong" kefir. The difference between the weak and strong kefir depends on the more advanced chemical changes in the stronger kind, resulting in a greater richness in lactic acid, carbonic acid, and alcohol. The bottle kefir sparkles, is more agreeable in flavour, and is drunk in greater quantities than the ordinary kefir. This drink may also be prepared from boiled milk. As regards dietetic value in health and disease, it is claimed that it is about equal to that of true koumiss, and decidedly superior to that of artificial koumiss. The ferment which contains the fungus may be obtained in a dried but active state from Frau A. Schneeman, 13 Deorientstrasse, Hanover.

KORONIKO.

The plant Veronica salicifolia, and Veronica parviflora.

Therapeutical uses.—It is highly esteemed in China as well as in New Zealand as a remedy for dysentery and diarrhœa. It has been extensively used in chronic forms of the disease, and favourable reports have been obtained on its efficiency.

Preparation and dose.—Valoid, or equivalent fluid extract. Dose 10 to 20 minims (Burroughs, Wellcome and Co.).

KOUSSIN.

An active principle obtained from female flowers of Brayera anthelmentica. N.O. Rosaceæ.

Therapeutical uses.—It has been employed as a remedy for tapeworm; its efficacy has been frequently tested.

Preparation.—Koussin. Dose 10 to 20 grains for adults; 2 to 5 grains for children.

LEPTANDRA.

The root of Leptandra Virginica, growing in the United States, east of the Mississippi, commonly called Culvers root, or black root.

Therapeutical uses.—It contains a crystallisable principal known as Leptandrine, and also a resin.

Leptandra is an active cathartic, but in the form of a valoid or fluid extract acts mildly, causing liquid and bilious stools. It possesses cholagogue properties. It is indicated in diseases of the intestinal canal, and in diseases in which there is constipation, with insufficiency of biliary and intestinal secretion.

Preparation and doses.—1. Valoid or fluid extract (Burroughs, Wellcome & Co.). Dose ½ to 1 teaspoonful.

2. It may be given in form of pill with res. potas., ext. hyosci., ext. tarax., ext. coloc., jalap, and ol. menth pip.

LYCOPERDON.

The common fungus Lycoperdon Clavatum. N.O. Fungi, commonly called Puff-ball.

Therapeutical uses.—It has been re-introduced as a surgical dressing and hæmostatic, having long been a popular remedy for bleeding surfaces. The dusty mass from interior is sprinkled over wounds. Its action is rapid and effective, even in severe hæmorrhages.

LYCOPODIUM.

The yellow spores of Lycopodium Clovalium. N.O Lycopodiaciæ, commonly called Club-moss.

Therapeutical uses.—It has been employed in treatment of boils and as a remedy in catarrh, dysentery, and leucorrhœa, from its supposed action on mucous membranes.

Preparation and dose.—Tincture. Dose 10 to 15 minims.

MALT EXTRACTS.

Extract of Malt, the introduction of which as a therapeutic agent has almost revolutionised the treatment of disease, may be prepared from different kinds of grain, but Barley is the one most generally used.

Barley is turned into malt by soaking the grain in water, and then placing it in heaps. Heat is spontaneously generated, and, by occasionally turning the mass, is prevented from rising too high. To make Extract of Malt, an infusion of malt is prepared and concentrated *in vacuo* at a temperature not exceeding 100° F. In the German Pharmacopœia it is directed that the product should be *boiled*, but this plan is a bad one, as it destroys the ferment-diastase, on which, as we shall see presently, the therapeutic value of the product depends. Heat above 150° F. is destructive to diastase in solution, so that, in the words of Dr. Roberts, of Manchester, "if the extract be evaporated as is directed by the

German Pharmacopœia, at a temperature of 212° F., it is necessarily inert on starch."

The value of Extract of Malt as a therapeutic agent depends on the production of a principle or ferment called *Diastase.*

Ferments are divisible into two great classes: the organised, particulate, physiological, morphological, formed or insoluble ferments, which are low forms of vegetable life, such as the yeast plant; and the unorganised, diffused, chemical, non-morphological, or soluble ferments, such as the majority of those existing in the animal and vegetable organisms. Of this latter class *Pepsin* and *Diastase* may be taken as types.

Organised ferments were known to the ancients; unorganised ferments have been recognised so recently that Schwann, who first isolated pepsin in 1836, is still a professor at Liège, whilst Claude Bernard, who died a comparatively young man in 1878, first drew attention to the influence of the pancreas on food materials,

The two classes of ferments may be broadly divided from each other by certain obvious points of difference. Thus, the morphological ferments may be distinguished by a variety of means, physical and chemical, whilst the non-morphological group, to which the term "ferment can be properly applied, can be detected only by the results which they produce; since, as their name implies, they have neither shape nor form, they have no power of reproduction, they do not increase in bulk during the process of fermentation, and they are in every case the product of secreting glands.

Diastase was first isolated in the year 1833 by Payen and Persoz, who gave it this name as they believed it to be formed by a simple separation (διαστασις) of starch from granule. It has been detected in a number of plants, and exists naturally in the body, forming an important constituent both of the saliva and of the pancreas. When occurring in the saliva, it is known as "salivary diastase," or Ptyalin; whilst in the pancreatic juice it is known as "pancreatic diastase."

Diastase also exists abundantly in the liver, and in smaller quantities in the intestinal juice, in the blood and urine, and apparently in all the interstitial juices. Diastase from all these divers sources appears to act substantially in the same way on starch; indeed, according to M. Coutard, all forms of diastase are identical, the two ferments derived respectively from the animal and vegetable kingdoms being identical in their action on starch.

The most characteristic property of diastase, as already mentioned, is its power of converting, under favourable conditions, starch, first into dextrine, and then into maltose. The diastase which exists in Extract of Malt is of the most active description.

The importance of starch as an article of human food cannot be overlooked. If we regard the enormous proportion in which the seeds of cereals and leguminous plants and the tubes of the potato enter into our dietary, and the enormous percentage of starch in these articles, it will perhaps be no exaggeration to say that fully two-thirds of the food of mankind consists of starch.

In the normal human body – that is to say, in an ideal condition of health, the digestion of cooked starch is accomplished by the diastase contained in the saliva and pancreatic juices, but in the artificial condition which exists amongst civilised nations it is too often found necessary to supplement this action by the addition of an artificial diastase, or, to speak more correctly, a diastase obtained from the vegetable world.

A simple experiment will illustrate what is meant by this assertion. If the action of a fluid containing diastase—whether it be saliva, extract of pancreas, or Extract of Malt—on starch paste be watched, the first effect observed is the liquefaction of the paste, and the production of a diffluent solution. This change is effected with great celerity, and in two or three minutes the soft paste becomes a watery fluid. This is evidently a distinct act, and is antecedent to the saccharifying process which follows, the speed of the action depending primarily on the proportion and strength of the diastase employed. The further changes which take place in the solution can be shown by the addition of chemical reagents. If we test, as soon as liquefaction is complete, we get a pure blue, with iodine, and a slight reaction of sugar, with Fehling's solution. In a few minutes the sugar reaction becomes more decided, and although we still get a pure blue with iodine in the ordinary way of testing, by gradually diluting the blue solution, and then adding more iodine, we get a deep violet tint, showing the presence of a form of dextrine, known chemically as erythro-dextrine, in addition to the starch. The next step that takes place is the total disappearance of the blue reaction with iodine, and the substitution for it of an intense reddish-brown colouration of erythro-dextrine. By-and-by the reddish-brown colour is replaced by a yellowish-brown, indicating the preponderating presence of a different kind of erythro-dextrine. In the meantime, the sugar reaction goes on increasing, and becomes much more intense. The next step is the entire disappearance of any kind of colouration with iodine. The process is completed by the entire conversion of the starch into *Maltose.* This may be described as the end product of the action of diastase on starch.

Maltose resembles cane-sugar in many respects, but differs from it in possessing a greater power of rotating the plane of polarised light, and a diminished power of reducing copper salts. As Maltose is now ascertained to be the form of sugar produced in the digestion of starch, it assumes a new and considerable importance in physiological chemistry.

It is important to note that the diastase exerts its influence only on cooked starch. In the raw state starch is to man an almost indigestible substance, but when previously submitted to the operation of cooking, it is digested with great facility. Even at the temperature of the body, diastase has only a feeble action on the unbroken starch granule. In the lower animals the starch granule is probably attacked in the first instance by some other solvent which penetrates its out membranes, and this enables the diastase to reach and act on the starchy matter contained within. By the aid of heat and moisture and the process of cooking, the starch granule is much more effectively broken up. Its contents swell out enormously by imbition of water, and the whole is converted more or less completely into a paste or jelly, or mucilaginous granule. It is in this gelatinous form exclusively or almost exclusively, that starch is presented for digestion to man.

The account here given of the transformation of starch has been deduced from an experimental study of the action of diastase derived from Malt. The question has often been asked whether the action of salivary and pancreatic diastase is identical with that of Malt diastase. The researches of Musculus and Mering give an affirmative answer to this question. These observers found that salivary and pancreatic extract acts upon starch paste in the same way as Malt diastase, the final product in each being Maltose, and not dextrine.

Great importance is to be attached to the time with regard to meals at which the Extract of Malt is administered. "If," says Dr. Roberts, "you wish to get the full amount of work from a dose of Malt Extract, you should administer it, like the natural diastase of the saliva, with the food, or you might even mix it with the food beforehand." Extract of Malt lends itself exceedingly well to this latter mode of administration. It has a sweet, agreeable flavour, and a teaspoonful or two may be added as a sweetner and mixed with tea, coffee, cocoa, arrowroot, sago, or any other farinaceous food.

The only precaution to be observed is that the food should be sufficiently cooled down to be endurable in the mouth before the Extract of Malt is added. It has been found on trial that you cannot eat or sip, even in teaspoonfuls, any substance which has a temperature above 150° F., and at this heat diastase not only remains uninjured, but is highly active.

Another great advantage in the Extract of Malt lies in the important pharmaceutical uses to which it may be put as a vehicle for other drugs, especially cod-liver oil.

The various malt extracts and pharmaceutical preparations combined therewith, are now so well known and appreciated by the profession as to render any enumeration of them in this place unnecessary.

MENTHOL (MENTHA ARVENSIS).

A camphor obtained from the plant extensively cultivated in Japan, and recently introduced to this country by Mr. Thos. Christy, F.L.S.

Therapeutical uses.—Dr. Salisbury, of New York, has found it a remedy of great value in infusorial catarrh, by the following methods:—

1. By oral administration. ℞ Menthol ʒj.; fluid ext. liquorice; water; brandy āā ℥iij.; carbolic acid, grains xx.; ol. sassafras, gtt. xx.
   M *Dose* four (4) drops once in two hours.
2. By inhaling from the bottle containing menthol.
3. By putting ten grains of menthol in a teapot or covered jug with a small quantity of hot water, and inhaling through the mouth; or by other methods of inhalation.
4. By combination with ointments and application to the nostrils. Hay fever has been found tractable by this latter means.

MENTHOL CONES (Christy & Co.)

The crystals have been put up in a convenient form as cones, and are supplied at very moderate cost in closely-fitting boxes and bottles, on account of the exceedingly volatile nature of the drug. In this form it has been used with considerable success in facial neuralgia, nervous headache, &c.

MERCURY FORMAMIDE.

A colourless liquid, prepared by treating ethyl formate with alcoholic ammonia; this dissolves mercuric oxide. It must be kept in brown glass.

Therapeutical uses—It has been recommended by Liebreich as a useful and rapid remedy for syphilis.

Preparation and dose.—One per cent. solution. Subcutaneous use. Dose 5 to 10 minims.

MICROMERIA.

The herb Micromeria Douglasii, growing in California. N.O. Labiatæ, otherwise called Yerba Buena.

Therapeutical uses.—It possesses aromatic and slightly bitter properties, and owing to its alterative, laxative, and tonic action, has been employed in atonic dyspepsia.

Preparation and dose.—Fluid extract. Dose 30 to 60 minims.

MONESIA.

The bark of Chrysophyllum Glycyphlœum, growing in South America. N.O. Sapotaceæ.

Therapeutical uses.—It has been found useful in the treatment of diarrhœa and dysentery.

Preparation and dose.—Fluid extract. Dose 50 to 60 minims. Monesine. Dose $\frac{1}{4}$ to $\frac{1}{2}$ grain.

MUDAR BARK.

The bark of Calotropis Gigantea, growing in India. N.O. Asclepiadaceæ.

Therapeutical uses.—It has been long employed in India for snake bites and skin affections, and has also been used for epilepsy.

Preparation and dose.—Powder. Dose 5 to 6 grains.

MUSCARINE.

The active principle of Manita Muscaria, a fungus growing freely in Great Britain, commonly called Fly agaric.

Therapeutical uses.—It resembles pilocarpine in its action, causing free salivation, perspiration, purging, and vomiting, lessening the pulse and cardiac action. It contracts pupil when given internally, but its local application causes dilatation. It has been employed by Murrell for the night sweats of phthisis.

Preparation and doses.—1. Nitrate of muscarine. Dose $\frac{1}{20}$ to $\frac{1}{40}$ of a grain.

2. Liquid ext. 1 per cent. Dose 5 minims.

MYRCIA.

The leaves of Myrcia Acris, growing in the West Indies. N.O. Myrtaceæ.

Therapeutical uses.—A volatile oil is distilled from the leaves, from which the spirit commonly known as Bay rum is made. It has been employed as a local application to the scalp for dandriff and other scaly eruptions, and as a wash for tender skins.

Preparation and dose.—Spirit, used externally, either pure or diluted with water.

ŒNOTHERA BIENNIS.

A biennial plant, indigenous to United States, commonly called evening primrose.

Therapeutical uses.—It has been used as a local application. A decoction of the young shoots has been recommended in skin diseases. It has also been tried in diseases of the respiratory tract.

Preparation and dose.—Fluid extract. Dose 30 to 60 minims.

OLEATA.

To Professor Shoemaker, Philadelphia, we are indebted for the production of the perfected oleated preparations now so generally used. Professor Shoemaker states (*Medical Press and Circular*, July 16th, 1884), that the oleates hitherto manufactured are not oleates at all, but merely solutions of oleic acid and various bases. In addition, owing to their oleic oil being derived from the red oil of the candle-makers, they invariably contain a large portion of oxyoleic acid and various other compounds, all possessed of an irritating action on the integument.

Dr. Shoemaker claims that he has overcome the disadvantages, attached to the employment of the older oleates, by obtaining definite compounds, instead of the unstable, unreliable solutions of oleates hitherto sold as such, and that by drawing his oleic acid from other sources, he has been enabled to produce it chemically pure, and in a condition favourable to the formation of definite oleic salts, with any given metal. He also insists on the impropriety of employing any of the various petroleum products, or vaseline, as the bases for ointments, oleates or not, the animal fats having much more affinity for animal tissues than the former, and penetrating the epidermis and glands much more easily. He doubts the efficacy of the alkaloidal oleates, maintaining that they are exclusively local in their action, no trace of them being obtainable in the secretions or excretions. The following description of the oleates is taken from Professor Shoemaker's lecture delivered at the Westminster Hospital, and published in this journal, and from his paper read at the meeting of the International Medical Congress, 1884, Copenhagen, Aug. 16:—

In addition to the pure Oleate, obtainable in some cases in powder, the oleates are prepared in two forms by Messrs. Allen & Hanbury, viz.:—

1. *Dusting Powder*, containing 10 per cent. and 20 per cent. of the oleate, in combination with an inert powder.
2. *Ointment*, containing 20 per cent. (or any percentage) of oleate with chrisma.

1. ALUMINUM, OLEATE OF.

This is prepared by treating sulphate of aluminum with sulpholium oleates, the result being a powder which, when combined with a fatty substance, forms an ointment, of service in muco-purulent discharges, ulcers, pustular eczema, chilblains, burns, scalds. It may be used in the proportion of from 5 to 30 grains in an ounce of lard.

Alum. oleas; pulv. alum. oleat. comp., 10 per cent. and 20 per cent.; ung. alum. oleatis, 20 per cent.

2. ARSENICUM, OLEATE OF.

A reddish-brown waxy substance. Rubbed down with lard in the proportion of from 5 to 60 grains to the ounce, it forms a most important alterative and escharotic, of use in the treatment of epithelioma, ulcerating lupus, and old chronic ulcers, warts, corns, old granulations, nævi, &c.

Arsenic. oleat.; pulv. arsenici oleat. comp., 5 per cent.; ung. arsenici oleatis, 5 per cent.

3. BISMUTH, OLEATE OF.

A pearly unctuous material. A valuable emollient application in the various forms of rosacea, acne, sycosis, piles, and in any case where there is irritation of the skin.

Bismuth. oleas; pulv. bismuthi oleat. comp., 10 per cent. and 20 per cent.; ung. bismuthi oleatis, 20 per cent.

4. CADMIUM, OLEATE OF.

A yellowish-white mass, which, combined with lard in the proportion of 5 grains to the ounce, has a marked astringent action bordering on an escharotic. It has been extensively employed in the treatment of enlarged glands, ulcers, and chronic eczema.

5. COPPER, OLEATE OF.

A beautiful green substance, making an elegant preparation for the treatment of ringworm, fevers, chromophytosis, warts, corns, bunions. It may be mixed with lard in the proportion of 5 to 10 grains to the ounce, or the oleate itself may be melted, and spread on muslin or leather.

Cupri. oleas; pulv. cupri. oleat. comp., 10 per cent. and 20 per cent.; ung. cupri oleatis, 20 per cent.

6. IRON, OLEATE OF.

A reddish-brown mass, readily soluble in fats. It is mildly astringent and non-irritating, and is useful in scrofula and arsenical sores.

Ferri oleas; pulv. ferri oleat. comp., 10 per cent. and 20 per cent.; ung. ferri oleatis, 20 per cent.

7. LEAD, OLEATE OF.

It is similar in appearance to the Cadmium Oleate, and when mixed with an equal amount of lard forms an elegant ointment, which will be found useful in acne, rosacæ, and the various forms of eczema.

Plumbi oleas; pulv. plumbi oleat. comp., 10 per cent. and 20 per cent.; ung. plumbi oleatis, 20 per cent.

An elegant form where lead is indicated.

8. MERCURIC OLEATE.

Made into an ointment with lard is useful in inflammatory exudations, in corns, warts, pigmentary deposits, vegetable and animal parasitic affections.

Hydrarg. oleas; pulv. hydrarg. oleat. comp., 10 per cent. and 20 per cent.; ung. hydrarg. oleatis, 20 per cent.

9. MERCUROUS OLEATE.

It is one and a-half times stronger than the preceding, and may be used in the same class of cases; but in addition it is recommended in the unctuous treatment of syphilis.

10. NICKEL, OLEATE OF.

A greenish waxy mass, possessing astringent and somewhat escharotic effects. Diluted with lard, 5 to 10 grains to the ounce, it will be found serviceable in chronic eczema, chronic ulcers, and to hard, horny, granulating surfaces.

11. SILVER, OLEATE OF.

A brownish pulverulent substance, especially valuable when employed as an ointment to bed-sores, ulcers, in pruritis, erysipelas, boils, and carbuncles.

Argenti oleas; pulv. argenti oleat. comp., 10 per cent. and 20 per cent.; ung. argenti oleatis, 20 per cent.

12. TIN, OLEATE OF.

Applied as an ointment to diseased nails, it restores them to their natural state, as well as imparting a beautiful lustre.

13. ZINC, OLEATE OF.

A white, pearly impalpable powder, the most important of all the oleates. When diluted with an emollient powder, it forms an excellent toilet powder for the face, particularly in seborrhœa oleosa, intertrigo, erythema, herpes; and as an ointment it is valuable in acute eczema, hyperidrosis, and promidrosis.

Zinci oleas; pulv. zinci oleat. comp., 10 per cent. and 20 per cent.; ung. zinci oleatis, 20 per cent.

14. OLEATE OF MERCURY AND MORPHIA.

5 per cent., 10 per cent., and 20 per cent.

PANCREATISED PREPARATIONS.

In various forms of weak digestion occurring in invalids, convalescents, and particularly aged persons, the various combinations introduced by pharmaceutists under the head of peptonised or pancreatised foods have been found of the greatest value. The digestive ferments contained in the pancreas of man were first divided by Claude Bernard, and attention has recently been directed afresh to the subject by Dr. Roberts, of Manchester, who has carried the subject much further, and, by a series of very exhaustive experiments, shows that these ferments are divided into—(1) *Trypsin*, which changes proteids into peptones in alkaline and neutral media; (2) *Curdling Ferments*—curdle the casein of milk; (3) *Diastase*—changes starch into sugar and dextrine; (4) *Emulsive Ferment*—emulsifies and partially saponifies fats.

When the process of digestion is relieved, by previous preparation, of part of its work, digestion is easier, and hence all these combinations have met with great favour.

There is a certain degree of scepticism as to the value of pancreatic preparations, but a very simple and striking experiment will give a rough proof of the value of such agents. If we take, for instance, any reliable pancreatic solution, and add a few drops to a teacupful of *thick, lukewarm* arrowroot or other farinaceous food, and stir together, almost instantly the contents of the cup will become as thin as water from the action of the pancreatic ferment on the starch.

The following is a list of the Pancreatised and Peptonised preparations most in use:—

1. PANCREATIC EMULSION (Savory & Moore), or Pancreatised (Predigested) Fat, valuable, as an article of diet in consumption, wasting, loss of appetite, strength, and digestive power.

   Dose 1 to 3 drachms.

2. PEPTODYN (Savory & Moore).

   A combination of the digestive principles of the saliva, stomach, and pancreas.

3. LACTOPEPTINE (Richards).

   A combination of pancreatine, pepsine, ptyalin, lactic and hydrochloric acids.

   Professor Attfield says that in a careful series of experiments he observed that any given weight of acidified pepsin alone at first acts somewhat more rapidly than lactopeptine containing the same weight of the same pepsin. Sooner or later, however, the action of the lactopeptine overtakes and outstrips that of pepsin alone—due, no doubt, to the meat-digesting, as well as fat-digesting, power of the pancreatin contained in the lactopeptine.

4. SUCCUS PANCREATICUS (Savory & Moore); ESSENCE PANCREATINE.

   Is especially suitable, not only for internal administration, but also for the peptonisation or predigestion of milk, gruel, &c. Milk or milk gruel peptonised by Succus Pancreaticus is of very pure and superior flavour.

   Dose ʒj.

5. SALINE ESSENCE PANCREATINE (Savory & Moore).

   Is of an agreeable ketchup flavour, and affords powerful digestive aid when taken as a sauce with food, or before or after meals.

Dose ʒj.

6. Pancreatine wine (Savory & Moore).

An excellent vehicle for the administration of cod-liver oil, the digestion of which it actively promotes.

Dose ʒj.

7. Pancreatine in powder (Savory & Moore).

Unites all the digestive principles of the pancreas, and is largely prescribed, not only in this country, but in America and abroad, for the digestion of cod-liver oil, and fatty and farinaceous foods generally.

Dose 3 to 5 grains. Can also be had in granules and pills.

8. Peptonised fluid meat (Darby's).

Is made from the lean of English beef; predigested, and is a most powerful restorative food, as it contains the whole constituents of flesh in a form which can be at once assimilated without any work being thrown on the digestive organs.

9. Liquor pancreaticus (Benger).

An extract in which the digestive principles (proteolytic and amylolitic) of the pancreas exist in a state of great activity. It is used—

(1) For the preparation of peptonised or partially digested foods, such as milk, soups, beef-tea, &c., the administration of which has been attended with such great success in the treatment of various diseases. Simple directions for preparing these accompany each bottle, and no special apparatus is required.

(2) As an addition to various articles of invalids' diet, greatly assisting their digestion.

(3) In doses of one or two teaspoonfuls, with a pinch of carbonate of soda, two or three hours after meals, to assist intestinal digestion.

(4) As a most valuable addition to nutritive enemata.

10. Peptonised beef jelly (Benger's).

A delicately flavoured, concentrated, partially digested, and solidified beef-tea, containing, besides the salts and flavouring principles, much of the fibrin and flesh-forming elements of the beef in a soluble form, fit for immediate absorption. On this account it constitutes an exceedingly valuable and delicious quick restorative. It can be taken by teaspoonfuls, cold as a jelly, or dissolved in a little hot water, as a concentrated beef-tea. It is also used to fortify or enrich ordinary beef-tea, soups, &c. It affords to invalids, when travelling, a ready and convenient form of concentrated nutriment.

11. PEPTONOIDS (BEEF) (Carnrick's).

A concentrated palatable and easily digested nutrient. It is in the form of a dry powder, and is partially prepared for assimilation.

Professor Stutzer, of Bonn, has recently published the results of a series of experiments with this preparation, from which he concludes "that beef peptonoids has an extremely high nutritive value. It is easily digested, and is a good nutritive food for invalids and convalescents. Its odour and flavour surpass any preparation of meat ever examined by me."

Professor Attfield endorses these views, and says "it is in every way an acceptable article of food, containing as it does nearly seventy per cent. of purely nutritive nitrogenous material, such as is possessed by no other extract."

12. SELF-DIGESTIVE FOOD (PANCREATISED FARINACEOUS) (Benger's).

Benger's Self-Digestive Food is another example of how much can be done by careful preparation and chemical skill. In this preparation we have a special flour, very finely ground, cooked, and then impregnated with the digestive principles of the pancreas; the ground malt is replaced by a pancreatic extract, thus assisting the digestion of the milk and albuminoids of the flour, as well as the starch, and enabling very delicate children and invalids to retain this food when others have been found to disagree.

13. PEPTONISED MILK.

Milk can be peptonised by means of a pancreatic solution at a cost of one penny per pint, one teaspoonful being sufficient for a pint, allowing a little more time; two teaspoonfuls hasten the process.

A most convenient preparation for those who object to give the necessary time and trouble to peptonise milk themselves is the Peptonised (Concentrated)

Milk of Savory & Moore, which can be instantly prepared by the most inexperienced person.

14. EXTRACTUM PANCREATIS (Fairchild) (Burroughs, Wellcome & Co.)

This is one of the best preparations of the digestive ferments, and in America enjoys a large sale and deserved popularity. Prof. Haynes, Philadelphia, has tested it largely as a peptonising agent for milk (*American Journal of Obstetrics*), and has largely employed it for the wasting diseases of infancy and childhood. In gastric and intestinal disorders Fairchild's Extract can be recommended. It is free from starch, milk, sugar, and represents all the digestive ferments of the pancreas.

15. PANCREATIC POWDERS AND TABLETS (Burroughs, Wellcome & Co.)

May be obtained made up in convenient and palatable forms.

PAPAIN.

A white, amorphous powder, prepared from the juice of Carica papaya, insoluble in alcohol.

Therapeutical uses.—It has been employed in various forms of dyspepsia, and as a remedy for diphtheria. Though it acts as a solvent on fibrine, yet it does not injure the coat of the stomach.

Professor Finkler, Bonn, has reported favourably on Papain. He states that he has paid particular attention to the chemistry of digestion and of ferments, and that papain interested him for this reason: He found it dissolved albumen and fibrin, in acid, alkali, and pure water. At the University Hospital he employed it in the treatment of diphtheria, and reports that all have recovered. The membranes were painted with papain five times a day, and under its influence it disappeared. Professor Rossbach confirms his results. A solution is made with water, and this is renewed as often as is necessary. He has taken it in doses of 0·1 to 0·2 gramme. Professor Finkler claims for it some advantages over pepsin. Flatulency and similar complaints caused by any abnormal matter in the bowels will be prevented by the use of papain. Papain may be prescribed in the form of a powder, which should be mixed with water in a spoon or glass. Finkler gives it either pure or mixed with *Natron bicarbonicum* (bicarbonate of soda), or a mixture with equal parts of *Natron bicarbonicum* and *Elæosacharum menthæ piperitæ.* It should be taken immediately after meals. The dose is 0·1 to 0·3 gram = 1½ to 4½ grains. Both Professor Finkler's papain and Papain-Christy are supplied by Christy & Co. in samples for testing.

Papain-Christy has been used with success for gall-stones, and is now being experimentally tested in discharges of the urinary canal.

Preparation and doses.—1. The powder—dose 1½ to 4½ grains. It is also put up in 1-grain doses as a dinner pill. Papain-Christy is a white, and Papain-Finkler a brown powder.

2. It may be used as a lotion, with borax, to dissolve hypertrophied conditions of skin.

Papayotin, 12 grains; borax, 5 grains; water, ʒis.

PALILLO.

A Mexican plant, Croton mariformis.

Therapeutical uses.—The natives of Mexico use the leaves of the plant in the form of an astringent as a remedy for gastralgia, atony of the stomach, and neuralgia. The seeds contain an oil possessing purgative properties.

Preparation and dose.—1. Tinct. of the leaves. Dose 10 to 15 drops.

2. Oil extracted from the seeds. Dose 1 to 3 drops.

PELLETIERINE.

An alkaloid discovered by Tanret in Pomegranate bark, so called in honour of Pelletier, the eminent chemist.

Therapeutical uses.—Pomegranate bark has long been used in veterinary practice as an anthelmintic, and, according to Kuchenmeister, kills the tapeworm in a short time.

Tanret's Pelletierine has given the most satisfactory results in the hospitals where it has been tried for tænia, at the Marine hospitals of Toulon, St. Mandrier, &c., and in Paris, at St. Antoine, La Charité, Necker, and Beaujon, &c. Dr. Dujardin-Beaumetz declared to the Society of Therapeutics that he was successful in thirty-two cases out of thirty-three treated with pelletierine in the year 1879, and Prof. Laboulbène, in the first two months of the year 1880, was successful in every case he had—fourteen in all.

Preparation and dose.—Tanret's Pelletierine. Pelletierine should not be given to children less than 10 years of age. About 10 or 12 years half a dose is sufficient, and two-thirds for delicate ladies.

This preparation is pleasant to administer, and if certain preliminaries are observed, success will be insured.

Directions.—In the evening the patient must use a large injection, and place himself on milk diet. The next morning mix the contents of a bottle with a glass of sweetened water, which is to be taken at one dose; fifteen minutes after take 30 grammes or 1oz. compound tincture of jalap mixed with one half-glass of sweetened water. For ladies, the dose should be reduced to 20 grammes. The compound tincture of jalap may also be used. If the bowels are not relieved in a few hours after taking the purgative, then take either another purgative or an injection made with 30 grammes of sulphate of soda. A few minutes after having taken pelletierine there will be a sensation of giddiness, and the entire tapeworm will be passed, from two to four hours after the remedy has been taken.

PENTHORUM SEDOIDES.

The common herb growing freely in some parts of the United States. N.O. Crassulaceæ, otherwise called Virginia Stone-crop.

Therapeutical uses.—It has been employed in pharyngitis and chronic nasal catarrh.

Preparation and dose.—Fluid extract. Dose 10 to 30 minims.

PEPSIN AND ITS PREPARATIONS.

Pepsin is a light, brown-yellowish powder, prepared by drying under 100° the fresh lining of the stomach of pig, sheep, or calf.

Therapeutical uses and action.—Pepsin is one of the important elements of the gastric juice, reducing the albuminoid and protein constituents of the food to a fit state for absorption. It also stimulates the secretory functions of the gastric mucous membrane.

Pepsin, artificially made, is intended as an aid to digestion. It has therefore a wide range, proving useful in atonic dyspepsia, anæmia, diarrhœa, and in other conditions dependent on imperfect assimilation of food. It has been largely used in the form of nutrient enemata, thus ensuring preliminary digestion of the injected food.

Preparations—

1. Pepsina porci (Bullock's). Dr. Beale's process.
   Dose 2 to 4 grains.
2. Acid glycerine of pepsine (Bullock's).
   Is said to possess at least three times the digestive power of any other preparation of pepsine and glycerine.
   Dose ʒj. to ʒij.
3. Liquor pepticus (Benger).
   An exceedingly active fluid pepsine. It is without disagreeable taste, and, being used to assist the natural digestive powers of the stomach, is best taken during a meal.
   Dose one or two teaspoonfuls in a wineglass of water, wine, or weak spirit and water, with meals.
4. Liq. euonymin et pepsin co. (Oppenheimer's).
   This preparation is a combination of Euonymin with pure Pepsina Porci in a fluid state.
   The specific, stimulating, and cholagogic action of Euonymin on the biliary organs, in conjunction with pure pepsine, has proved of great advantage in cases of irritative dyspepsia, with atony of gastric or intestinal muscular layers, and especially in relieving pain accompanying gastric carcinoma, pyrosis, and in dyspepsia with water-brash.
5. Pepsine tablets. *Dose* one or two after meals.
6. Pepsine saccharated. *Dose* 5 to 10 grains.
7. Pepsine wine (Boudault's). *Dose* 1 to 2 drachms.
8. Lactopeptine (Richards). (See under Pancreatised Preparations.)
9. Savory & Moore prepare a Concentrated Peptonised Milk, and Cocoa and Milk, for which the following advantages are claimed:—Without calling for any digestive effort, it can, in the absence of all other

food, supply the system for an indefinite period with the nutriment which it requires. Besides proving useful in those cases of atonic dyspepsia in which even milk in its unaltered condition cannot be digested, it is of special value in the severer forms of dyspepsia, in the irritable state of the stomach which is often associated with the pyrexia following surgical operations, in gastric ulcer, and in malignant and other organic lesions of the stomach in which all but fully-peptonised foods are rejected.

The great drawback to the extended use of peptonised milk has hitherto been the trouble, care, and even skill required to be daily expended to prepare a fairly palatable and uniformly peptonised product. This may be overcome by the peptonising powders of Fairchild. These powders are put in small glass tubes, each containing enough to peptonise one pint of milk.

10. Burroughs, Wellcome and Co., have introduced a pepsine in scales. This original form possesses great activity, and owing to its permanence and price is highly recommended. It is guaranteed free from milk, sugar, starch, or any added substances. One grain in eight fluid ounces of water, with one per cent. per volume of H. Cl., will dissolve 1000 grains coagulated albumen in four hours at a 100°—the standard test.

PEROSMIC ACID.

An acid obtained from the metal Osmium by various methods. It has an extremely pungent odour and acrid taste; it is soluble in alcohol and ether.

Therapeutical uses.—It has been recommended in cases of sarcoma, lymphoma, in large strumous and cancerous glands, and chronic neuralgias.

Preparation and dose.—A 1-per cent. solution. 1 to 3 minims may be used hypodermically.

PHORADENDRON FLAVESCENS.

A parasite growing on several trees, especially the oak, sometimes called Viscum album, commonly known as mistletoe. N.O. Lazanthaceæ.

Therapeutical uses.—It has been used by the old Greek physicians, Hippocrates, Dioscorides, &c. Hippocrates recommends it in diseases of the spleen. It has been employed in nervous affections, hysteria, and dysentery, especially in epilepsy. It possesses narcotic, anti-spasmodic, and tonic properties.

Preparation and dose.—Fluid extract. Dose 10 to 30 minims.

PHYTOLACCA.

The herbaceous plant Phytolacca decandra. N.O. Phytloaccaceæ, commonly called Poke root, and growing in the United States.

Therapeutical uses.—It is said to possess emetic, purgative, and narcotic properties, and has been employed in the treatment of various diseases, as chronic rheumatism, granular conjunctivitis, and in syphilis, in which it is combined with stillingia, lappa, sarsaparilla, in the well-known formula introduced to the profession by Dr. Marion Sims.

Preparation and dose.—Fluid extract. 10 to 20 minims.

PINUS SYLVESTRIS.

The common Pinus sylvestris growing in northern and central Europe.

Therapeutical uses.—It is employed as a local and internal remedy in rheumatism, paralysis, skin diseases, chronic catarrh, chronic laryngitis.

Preparations and doses.—1. The volatile oil is used internally in doses of 15 to 20 drops. In inhalations it is mixed with light carbonate of magnesia and water.

2. A fluid extract is employed in baths.
3. Wool and wadding cure are used at German baths.

PISCIDIA.

The bark of Piscidia erythrina, a tree growing in the Antilles, commonly called Jamaica dog-wood.

Therapeutical uses.—It is a narcotic, owing its properties to an active principle, piscidin ; it acts on the sensory ganglia of the spinal cord. It is employed internally and locally as a remedy for toothache and neuralgia of the fifth pair, in delirium tremens, as a sedative in asthma and bronchitis, and as an anodyne to allay pain, spasm, and nervous excitement.

Preparation and dose.—Fluid extract. Dose 20 to 60 minims.

PLANTAGO.

The seeds of J. P. Major, commonly called plantain seeds.

Therapeutical uses.—The plantain seed is officinal in the Indian Pharmacopœia, where it is used as a remedy for dysentery, owing to its demulcent properties. The juice of plantago major has been recommended by Professor Quinlan, Dublin, in cases of bleeding from the nose, lungs, &c.

Preparation and dose.—Decoction, two drachms of the bruised seed in two pints of water. Dose 2 to 4 ounces three or four times a day.

POLYMNIA UVEDALIA.

Bearsfoot. N.O. Asteraceæ.

Therapeutical uses.—It has been recommended in various affections of the spleen, and particularly in enlargement of that organ. It action is resolvent and astringent.

Preparation and dose.—Fluid extract. Dose 20 to 40 minims.

NGAMIA.

A leguminous tree growing in India—Pongamia glabra. An oil is obtained from the seeds.

Therapeutical uses.—It is a popular remedy in India for skin diseases—scabies, herpes, pityriasis. It has been employed by British practitioners, and reported on favourably, in cases of ringworm, &c.

Preparation.—The oil expressed from seeds rubbed in two or three times a day.

PTELEA TRIFOLIATA.

A shrub indigenous to North America. N.O. Xanthoxylaceæ, commonly called Wafer-ash.

Therapeutical uses.—One of the many remedies recommended for asthma. In some reported cases it has proved useful.

Preparation and dose.—Dose 10 to 30 minims.

QUEBASCHO.

A South American bark, much used in tanning and dyeing, for which the outer layer is used, the inner having recently been used for producing an extract for medicinal purposes.

Therapeutical uses.—It is as yet little known in this country, but American authorities speak highly of it in uterine inflammation, leucorrhœa, hæmorrhoids, and affections of the mucous membranes.

Preparation.—Liquid extract (Brown & Co., New York and London), for injection or internal application, according to the nature of the case.

QUEBRACHO.

The bark of Aspidosperma Quebracho. N.O. Apocynaceæ, a tree growing in the Argentine Republic.

Chemistry.—Frande discovered an alkaloid Aspidospermine, but Hesse has since determined that there are as many as six alkaloids, in the aspidosperma of commerce. MM. Eloy and Huchard have separated the alkaloids in a state of purity.

Physiological action.—A series of thirty-six physiological experiments have been made by MM. Eloy and Huchard on the anti-thermic action of these alkaloids. All the alkaloids were found to have a marked antipyretic action. A remarkable effect was also observed to occur in the colour of the venous blood, which became of a vermilion tint like that seen after poisoning by prussic acid and carbon monoxide.

Subcutaneous injections of 10 to 20 centigrammes of the hydrochlorate of aspidospermine in patients suffering from typhoid fever appeared to lower the temperature where quinine had no effect. Lactate of aspidospermatin is a more powerful alkaloid in reducing temperature than the hydrochlorate. The sulphate of hypo-quebrachine and the lactate of quebrachine are still weaker antipyretics.

Therapeutical uses.—For a long period of time the inhabitants of South America have employed quebracho on account of its febrifuge, tonic, and anti-asthmatic and astringent properties. Dr. Berkart reports favourably on its use in dyspnœa associated with emphysema of the lungs, and atheroma and degeneration of the cardiac muscles.

Preparations and doses.—1. Liquid extract. Dose one teaspoonful.

2. Tinct. 1 to 5 of proof spirit. Dose ½ to 1 drachm.
3. Aspidospermine, hydrochlorate of. Dose 10 to 20 centigrammes.
4. Aspidospermine sulphate. Dose not fixed.

RESORCIN.

One of the Benzol series, standing between pyrocatechin and hydrochinon. It is obtained from resins by the action of fusing alkalies, and when chemically pure occurs in white, shiny needles, having an aromatic odour and bitter taste.

Therapeutical uses.—It is a very powerful antiseptic. It is said that a 1 per cent. solution prevents decomposition of pancreas, blood, urine, &c. It has been given with benefit in infantile diarrhœa, remittent and malarial fevers, erysipelas, and has been used as a wash in purulent discharges from wounds.

Preparations and doses.—Resorcin—10 to 30 centigrammes to 60 grammes of water. Lotion—1 to 10 per cent.

RHAMNUS FRANGULA.

The bark of Rhamnus frangula, imported from Holland, commonly called black alder or buckthorn. N.O. Rhamnaceæ.

Therapeutical uses.—This medicine was largely used by some of the old school, and may be reckoned among the old remedies out of fashion. It has, however, been largely used by veterinarians under the form of syrup of buckthorn. It is a tonic laxative. The dose need not be increased if taken habitually. Its action is gentle without griping. It is especially indicated in hæmorrhoids. It is officinal in United States Pharmacopœia.

Preparation and dose.—Fluid extract. Dose ½ to 2 drachms.

RHUS AROMATICA.

A plant growing in United States. N.O. Anacardiaceæ.

Therapeutical uses.—It possesses valuable astringent properties. It has been employed in various diseases, as diabetes, phthisis, hæmorrhages, chronic cystitis, and diarrhœa.

Preparations and doses.—1. Fluid extract. Dose 5 to 20 drops.

2. Tinct., 4 ozs. bark to 20 ozs. of rectified spirit. Dose 20 to 60 minims.

RUBUS VILLOSUS.

The bark of the root of Rubus villosus, the common blackberry.

Therapeutical uses.—It is tonic and astringent. In the United States it has long been a favourite domestic remedy in bowel affections, and from popular favour has gradually passed into regular medical use. It is employed with great advantage in cases of diarrhœa and other forms of relaxation of the bowels, whether in children or adults.

Preparation and dose.—The best preparation is the Valoid. Dose 20 to 30 minims, diluted.

It is the *Ecoree de Ronce noire* of the French writers.

RUMEX.

The root of Rumex crispus, commonly called yellow dock.

Therapeutical uses.—It possesses astringent, tonic, and anti-scorbutic properties, and has been employed in affections of the stomach dependent on torpid or congested liver. It contains an extractive principle termed Rumicin.

Preparations and doses.—1. Rumicin. Dose 1 to 4 grs.
2. Tincture, one part to 10 of proof spirit. Dose 1 to 10 minims.

SANGUINARIA.

The rhizome of Sanguinaria Canadensis, or Blood root. Grows abundantly in all parts of the United States, it being one of the earliest and most beautiful of spring flowers. It contains an alkaloid—sanguinarine, a white, pearly substance of an acrid taste, forming soluble salts with acids.

Therapeutical uses.—In large doses the alkaloid is an active emetic, producing nausea and accelerating the action of the heart. It is very irritating to the mucous membranes. In medicinal doses it is a valuable remedy in atonic dyspepsia, and is much used in the treatment of catarrh of the duodenum attended with jaundice. Chronic nasal catarrh is successfully treated by this remedy. It possesses decided aphrodisiac properties, and is indicated in cases of relaxation of the genital organs, with inaptitude for social intercourse. As an alterative, it is useful in chronic syphilis and in strumous affections.

Preparations and dose.—The best preparation is the valoid of sanguinaria, equivalent fluid extract, the dose of which is from 5 to 10 minims, three times a day. Tincture, syrup, infusion, and decoction can be readily prepared from the valoid, which represents the standard drug, weight for weight.

SAXIFRAGE.

An herbaceous perennial plant.

Therapeutical uses.—It has been recommended as an injection in inflammatory conditions of the urethra, and is said to possess alterative properties.

Preparation and doses.—Infusion—1 part leaf to 10 ounces of water, used as an injection.

SCUTELLERIA.

The perennial herb Scutellaria lateriflora, growing in United States. It is officinal in U.S. Pharmacopœia.

Therapeutical uses.—It is a nervine tonic, and has been largely employed in nervous affections, as chorea, epilepsy, delirium tremens, hydrocephalus, and as a remedy for hydrophobia, its value in the latter affection being *nil.*

Preparations and doses.—1. Fluid extract. Dose 1 to ʒij.

2. Decoction, 2oz. to 8 of water. Dose 1 to ℥ij.

STIGMATA MAIDIS.

The green pistils of the corn silk. N.O. Gramineæ.

Therapeutical uses.—In Mexico it has long been used by the natives in nephritic colic, vesical catarrh, and in affections of mucous membranes. Prof. Cartar (Montpelier) has employed the infusion in the same class of case, and testimony as to its diuretic properties has been furnished by many American and French practitioners.

Preparations and doses.—1. Fluid extract. Dose 20 to 40 minims.

2. Syrup. Dose two to three teaspoonfuls three times a day.

STILLINGIA.

The root of Stillingia sylvatica—Queen's root, Queen's delight. Grows freely from Virginia to Florida, flowering in May and June. The root is the part used in medicine.

Therapeutical uses.—In large doses Stillingia is emetic and cathartic, and in small doses alterative. It is useful in habitual constipation, due to deficient secretion of the intestinal mucous membrane, torpidity of the liver, jaundice, and also renders important service in the first stage of cirrhosis, and in ascites due to hepatic changes. Hæmorrhoids may be relieved permanently by the timely administration of the drug. It is serviceable for children with enlarged cervical glands, and most satisfactory results have been obtained from the use of this remedy in syphilitic affections. It enters into composition of McDade's formula.

Preparation and dose.—Valoid of Stillingia. Dose 1 to 2 teaspoonfuls.

SYZYGIUM GAMBOLANUM.

The tree Syzygium gambolanum. N.O. Myrtaceæ, growing in India.

Therapeutical uses.—It has been recommended as a cure for diabetes. The fruit and bark possess astringent properties.

Preparation and doses.—The edible fruit.

THYMOL.

A stearoptene contained in Thymus vulgaris.

Therapeutical uses.—It has been used largely as an antiseptic for all the varied purposes for which carbolic has been employed, and has received an extensive use, as a soap, in the treatment of skin diseases. Tinea, eczema, affections of the scalp have been particularly benefited by its application in various forms.

Preparations and doses.—1. Unguentum, 5 to 10 grs. to ounce of vaseline, petroleum, or lard.

2. Solution (Volckmann's) { Glycerine 20
Thymol 1
Alcohol 20
Water 1000 } Used as a spray and lotion.

3. Thymol jelly (Richardson's). A suitable application in midwifery practice.

4. Thymolodyne. An agreeable and useful preparation introduced by Richardson from formula of Dr

Johnson. Each fluid drachm contains $\frac{1}{16}$ of a grain of thymol, $\frac{1}{8}$ of carbolic acid, with borax, benzoic acid. *Dose*—Adults, Two large spoonfuls. Children, half to one teaspoonful every four hours.

5. Vapour.
6. Pastilles.
7. Gauze.

TONGA.

Tonga is the name given to a fluid extract of a special combination of the roots and leaves of several plants, probably Epipremnum mirabile, Premna Taitensis. N.O. Verbenaceæ.

Therapeutical uses.—The drug was first introduced by Allen & Hanbury in 1879. The efficacy of it was discovered by a resident in the South Pacific, seeking relief from intense neuralgia. It is for this disease that Tonga has obtained its principal use; it has been called the specific for neuralgia. Drs. Ringer and Murrell and Mr. Bader have borne testimony to its value, so that its efficacy has been tested by competent authorities.

Preparation and dose.—Fluid extract. A teaspoonful in water three times a day.

USTILAGO MAIDIS.

A fungus growing on corn in United States, commonly called Corn smut or Corn ergot,

Therapeutical uses.—According to Crossley (American *Journal of Pharmacy*, 1861), it contains an alkaloid prophylaxin, one of the active constituents of ergot, and also secalin, with an acid, viscid oil. Cows fed on Indian corn infested with this parasite abort. It has been employed in obstetric practice in same class of cases in which ergot is indicated, over which it does not possess any advantage.

Preparation and dose.—Fluid extract. Dose 30 to 60 minims.

VERATRIA.

An alkaloid discovered in 1819 by MM. Pelletier and Caventon in the seeds of Veratrium Sabedella.

Therapeutical uses.—Though it has been long known to the profession, having been introduced in 1834 by Dr. Alexander Turnbull, in an 8vo entitled "An

Investigation into the remarkable Medicinal Effects resulting from the External Application of Veratria," it fell out of fashion, and has been again revived. Turnbull applied it externally in rheumatism, paralysis, gout, amaurosis, affections of the heart. It is recommended as an antipyretic and arterial sedative, in fevers, and acute inflammations, for which purpose it has found a line, and in alcoholic tremor, and nervous diseases. Its principal use has been for local applications in neuralgic affections.

Preparations and doses.—1. Veratria. Dose $\frac{1}{70}$ to $\frac{}{16}$ grain.

2. Oleatum veratriæ—Veratria 2 parts, oleic acid 100 parts.

3. Unguent veratriæ—Veratria, 8 grains; olive oil, 30 minims; adipose, 7 ounces.

VERBASCUM.

The fresh leaves of Verbascum Thapsus, or Great mullein. N.O. Scrophulariaceæ.

Therapeutical uses.—It has long enjoyed a reputation in Ireland and on the Continent as a remedy in phthisis. Dr. Quinlan has, in the pages of the *British Medical Journal*, vol. i., 1884, p. 294, adduced proof of its value in this disease. He claims for it the power of increasing weight, food assimilation, and of allaying cough. He insists on the necessity of using the fresh leaves of the great mullein. It may be administered in milk in the form of a decoction. Various preparations are made by pharmaceutists.

Preparations and doses.—1. Tincture—1 to 8 of proof spirit. Dose 10 to 20 minims.

2. Decoction—3 ounces fresh green leaves to one pint of milk. Boil for ten minutes; strain; sweeten with sugar, and drink warm. (Dr. Quinlan.)

3. Fluid extract. Dose 10 to 30 minims.

4. Cigarettes, or may be smoked in an ordinary pipe.

VIBURNUM.

The plant commonly known as Black haw. N.O. Caprifoliaceæ.

Therapeutical uses.—It is a nervine tonic and antispasmodic, and has been found valuable in threatened abortion and in cases of habitual miscarriage. Its tonic action on the uterus is especially marked.

Preparation and dose.—Fluid extract. Dose ½ to 1 drachm.

WARBURG'S TINCTURE.

A pyrexial preparation, called after the name of the inventor, Dr. Warburg.

Therapeutical uses.—In the *Practitioner*, February, 1877, there is a very good article on this preparation, from the pen of Dr. Broadbent. The following facts are taken from that paper:—Professor McLeau made known the following formula as that of this well-known tincture:—

Aloes socot. unciam.
Rad. rhei (East Indian),
Sem. angelica,
(*a*) *Confect. damocratis*, āā uncias quatuor.
Rad. helenii,
Croci sativi,
Sem. fœniculi,
(*b*) *Cret. prepar.*, āā uncias duas.
Rad. gentianæ,
Rad. zedoariae,
Pip. cubeb,
Myrrh elect.,
Camphor,
(*c*) *Bolet Laricis* (Agaric), āā unciam.

The above ingredients are to be digested with 500oz. proof spirit, in a water bath for twelve hours, then expressed, and 10oz. of bisulphate of quinine added; the mixture to be replaced in the water bath till all the quinine be dissolved; the liquor when cool to be filtered, and is then fit for use.

(*a*) *Confect. Damocrat.*—This confection, which consists of an immense variety of aromatic substances, was once officinal, and is to be found in the London Pharmacopœia, 1746.

(*b*) Dr. Warburg states that this ingredient was added to correct the otherwise acrid taste of th tincture.

(*c*) This is the Polyporus officinalis, or Agaric, formerly much used as a drastic purgative and sudorific.

Warburg's tincture has been largely employed in the treatment of malarial fevers, such as occur in India, and has lately been more generally employed in all the fevers—typhus, typhoid, and malignant scarlatina, and in diseases attended by extreme prostration. In neurasthenia it has been recommended in small doses, followed by combinations of the bromides and hypophosphites. It produces profuse perspiration, with fall of temperature.

Preparation and dose.—Tinctura pyrexialis (Warburg's). Dose—After bowels have been well acted on, a tablespoonful may be given, and repeated in three hours. No drink is allowed to be given in interval.

ANTHOXYLUM CAROLINIANUM.

A plant indigenous to North America. N.O. Rubaceæ. Commonly called Prickly ash.

Therapeutical uses.—It is an alterative, stimulant, and tonic, and has been recommended as a useful remedy in chronic rheumatism.

Preparation and dose.—Fluid extract (Squire). Dose ½ to 1 drachm.

APPENDIX.

SUMMARY OF

SOME NEW ACTIVE PRINCIPLES.

MANY practitioners are fond of using active principles in place of giving the crude drug, and for their advantage we present them with a short account of some of the more recent additions to the list of active principles. Podophyllin, Euonymin, Aloin, Leptandrin have now become standard forms for prescriptions in English practice; and perhaps when some of the newer active principles are more fully tested they will be found equally deserving of favour.

These active principles can be given in the form of pills, or can be made up in the form of tinctures, according to the taste of the prescriber.

Keith & Co., of New York, prepare concentrated tinctures and elixirs, and probably there may be some houses in England where these drugs can be obtained.

We must caution our readers against imagining that they are *homœopathic* preparations. It will be seen from the doses that they cannot be classed in this category.

ALETRIN.

This is derived from the root of Aletris farinosa, commonly called Star-grass.

Therapeutical uses.—It is a uterine tonic, emetic, and cathartic; has been recommended in amenorrhœa, dysmenorrhœa, dyspepsia, &c.

Dose ½ to 2 grains.

ALNUIN.

Derived from the bark of Alnus rubra, commonly called Tag-Alder.

Therapeutical uses.—Its properties are alterative, styptic, emmenagogue, resolvent, and tonic. It is recommended in scrofula, eruptions of the skin, rheumatism, syphilis, dyspepsia, and all hæmorrhages.

Dose 2 to 10 grains.

AMPELOPSIN.

Derived from the bark of Ampelopsus quinquefolia, known as woodbine, American ivy, &c.

Therapeutical uses.—It has been tried for scrofula, cutaneous diseases, bronchitis, asthma, dropsy, syphilis, rheumatism. It is said to have alterative, diuretic, expectorant, anti-syphilitic, and tonic properties.

Dose 2 to 4 grains.

APOCYNIN (See Apocynum cannabinum, page 13).

Dose ½ to 1 grain.

ASCLEPIN.

Obtained from the root of Asclepias tuberosa, otherwise called Pleurisy root, wine root, butterfly root, colic root.

Therapeutical uses.—Alterative, anti-spasmodic, carminative, diaphoretic, diuretic, expectorant, laxative, and tonic.

Dose 2 to 4 grains.

BAROSMIN.

Obtained from the leaves of Barosma crenata, commonly called Buchu.

Therapeutical uses.—It is recommended in gravel, catarrh of the bladder, disease of the prostate gland, hæmaturia, rheumatism, dropsy, gonorrhœa, cutaneous diseases, &c.

Dose 2 to 3 grains.

BETIN.

Derived from Beta vulgaris—Garden beet.

Therapeutical uses.—It is said to be resolvent and emmenagogue.

Dose 2 to 4 grains.

BRYONIN (See Bryonia, page 18).

Dose $\frac{1}{4}$ to 2 grains.

CAULOPHYLLIN (See page 18).

CERASIN.

Derived from the bark of Cerasus Virginiana, called Choke cherry.

Therapeutical uses.—It has been employed in intermittent and other fevers, debility, indigestion, chorea, hysteria, chronic cough, diarrhœa, dysentery, epilepsy, enlargement of the spleen. It may be used as a substitute for quinine. In fever and ague it is recommended with quinine and gelsemium in the form of pill—one grain of each.

Dose 2 to 10 grains.

CHELONIN.

Derived from Chelone glabra, commonly called Balmony, snake head.

Therapeutical uses.—It is said to be laxative, tonic, and vermifuge.

Dose 1 to 2 grains.

CHIMAPHILIN.

Derived from Chimaphila umbelata, otherwise known as winter green, ground holly, prince's pine, &c.

Therapeutical uses.—It is said to have alterative, diuretic, and astringent properties, and has been employed in rheumatism, dropsy, &c. Its long continued use is said to cause absorption of testes and mammæ.

Dose 2 to 3 grains.

CORNIN.

Derived from the bark of Cornus florida, commonly called dog-wood, box-wood.

Therapeutical uses.—It is recommended in intermittent and other fevers, indigestion, debility, neuralgia, epileptic convulsions, hysteria, &c.

Dose 2 to 4 grains.

CORYDALIN.

Obtained from the root of Corydalis formosa, known as Turkey corn, stagger weed, &c.

Therapeutical uses.—It has been employed in scrofula, syphilis, cutaneous diseases, dropsy

Dose 2 grains.

CYPRIPEDIN (See page 25).

Dose 1 to 2 grains.

DIOSCOREIN.

Obtained from the root of Dioscorea villosa, commonly known as wild jam, cholic root, &c.

Therapeutical uses.—It is said to have anti-spasmodic, diuretic, and expectorant properties.

Dose ½ to 4 grains.

ERYTHROXYLIN (See Coca, page 22).

Dose ¼ to 1 grain.

EUONYMIN (See Euonymus, page 29).

Dose ½ to 3 grains.

EUPATORIN.

Derived from Eupatorium perfoliatum.

Therapeutical uses.—Said to have alterative and tonic properties.

Dose 1 to 3 grains.

EUPHORBIN.

Obtained from the root of Euphorbia corolatta, called Blooming spurge.

Therapeutical uses.—Alterative.

Dose ¼ to 3 grains.

FRAZERIN.

Obtained from the root of Frasera Carolinensis, commonly known as American Calombo.

Therapeutical uses.—Possesses mildly tonic, astringent, and stimulant properties.

Dose 1 to 3 grains.

GELSEMIN (See Gelsemium, page 31).

Dose ⅛ to 1 grain.

GERANIIN:

Derived from Geranium maculatum, commonly known as Spotted geranium, purple crowfoot, &c.

Therapeutical uses.—It has been employed in affections of the mucous membranes and hæmorrhages.

Dose 1 to 3 grains.

GOSSYPIIN (See Cotton-root, Gossypium, page 24).

Dose 1 to 5 grains.

HAMAMELIN (See Hamamelis, page 33).

Dose 1 to 3 grains.

HELONIN.

Derived from the root of Helonias dioica, commonly called Drooping star-wort.

Therapeutical uses.—It is reported to act on the kidneys, bladder, urethra, uterus, and to stimulate the assimilating organs.

Dose 2 to 4 grains.

HYDRASTIN.

Dose 1 to 2 grains

HYDRASTIN MURIATE.

Dose 1 to 3 grains.

HYDRASTIN SULPHATE.

Dose 1 to 2 grains.

(See Hydrastis, page 39.)

INULIN.

Obtained from the root of Inula helenium. Known as Elecampane.

Therapeutical uses.—It is an aromatic, stimulant, tonic and expectorant, and has been employed in chronic pulmonary affections, dyspepsia, &c.

Dose 1 to 3 grains.

IRISIN.

Derived from the root of Iris versicolor—Blue flag.

Therapeutical uses.—It is a powerful hepatic and lymphathic stimulant according to Dr. W. Rutherford, Professor of the Institutes of Medicine, Edinburgh University. In his report to the Scientific Grant Committee of the British Medical Association on Cholagogues, he gave the results of his experiments, with a number of the active principles included in this Summary. The following is a brief account of his views.

1. Baptisin is a hepatic, and also an intestinal stimulant of considerable power.
2. Colocynth is a powerful hepatic as well as intestinal stimulant. It renders the bile more watery, but increases the secretion of biliary matter.
3. Euonymin is a powerful hepatic stimulant. It is not nearly so powerful an irritant of the intestine as podophyllin.
4. Hydrastin is a moderately powerful hepatic stimulant, and a feeble intestinal stimulant.

5. Irisin is a powerful hepatic stimulant. It also stimulates the intestine, but not so powerfully as podophyllin.
6. Jalap is a powerful hepatic as well as intestinal stimulant.
7. Juglandin is a moderately powerful hepatic and a mild intestinal stimulant.
8. Leptandrin is a hepatic stimulant of moderate power. It is a feeble intestinal stimulant.
9. Menispermin does not stimulate the liver. It slightly stimulates the intestinal glands.
10. Phytolaccin is a hepatic stimulant of considerable power. It also slightly stimulates the intestinal glands.
11. Podophyllin is a very powerful stimulant of the liver. During the increased secretion of bile, the percentage amount of the special bile solids is not diminished. If the dose be too large, the secretion of bile is not increased. It is a powerful intestinal irritant.

JUGLANDIN (See Juglans, page 42).

Dose 2 to 5 grains.

LEONTODIN.

Obtained from the root of Leontodon taraxacum—Dandelion.

Therapeutical uses.—It is recommended as an aperient and hepatic excitant.

Dose 2 to 4 grains.

LEPTANDRIN (See Leptandra, page 45).

Dose 2 to 4 grains.

LOBELIN.

Derived from Lobelia inflata—Indian tobacco.

Therapeutical uses.—It is recommended in diseases of the respiratory passages, as it possesses diaphoretic and expectorant properties.

Dose from $\frac{1}{4}$ to 3 grains.

LUPULIN.

Obtained from the cones of Humulus lupulus—Hops.

Therapeutical uses.—It possesses nervine and tonic properties, and has been found useful in affections of the nervous system.

Dose 1 to 2 grains.

LYCOPIN.

Derived from Lycopus virginicus—Water horehound, Bugle weed.

Therapeutical uses.—Recommended in diseases of the respiratory passages and affections of the mucous membranes.

Dose 1 to 4 grains.

MACROTIN.

Derived from the root of Cimicifuga racemosa, Black Cohosh, black snake root, Squaw root.

Therapeutical uses.—It is recommended in the exanthematous fevers, and particularly in rheumatism. It is said to contribute to the generation of nerve force, and has found a use as a parturient, increasing the contractile power of the uterus, but not being so powerful in its action as ergot.

Dose 1 to 3 grains. As a parturient, 2 to 3 grains, to be repeated, if necessary, within twenty to thirty minutes.

MENISPERMIN

Derived from the root of Menispermum canadense—Moon seed.

Therapeutical uses—It is said to exert an influence on the gastric and salivary glands, and absorbent system, promoting the depurative action of the kidneys.

Dose 1 to 4 grains.

MYRICIN.

Derived from the bark of the root of Myrica cerifera.

Therapeutical uses.—Reputed to be useful in affections of the mucous membrane.

Dose 1 to 3 grains.

PHYTOLACCIN (See Phytolacca, page 65).

Dose 1 to 3 grains.

POPULIN.

Derived from the bark of Populus tremuloides—White poplar, quaking aspen.

Therapeutical uses.—It is said to possess alterative and tonic properties, exerting an influence on the stomach, bowels, bladder, and urethra. As a remedy for painful and frequent micturition, accompanied with heat or scalding, populin, combined with a little tincture of myrrh, is said to act like a charm.

Dose 2 to 4 grains.

PRUNIN.

Derived from the bark of Prunus virginiana—Wild cherry.

Therapeutical uses.—Is reputed to act as a sedative to the pulmonary circulation, reducing congestion, and subduing inflammation. It has been largely used in the treatment of phthisis and other pulmonary affections.

Dose 2 to 3 grains.

PTELEIN (See Ptelea, page 66).

Dose 1 to 3 grains.

RHEIN.

Obtained from the root of Rheum palmatum.

Therapeutical uses.—Possesses alterative, laxative, and tonic properties; useful in dyspepsia and affections of the bowels.

Dose 1 to 4 grains.

RHUSIN.

Derived from the bark of Rhus glabrum, sumach.

Therapeutical uses.—Is said to be one of the most valuable of the astringent tonics, and to be very useful in the treatment of chronic diarrhœa in consumptive patients, exerting a healthy influence on the mucous membrane of the stomach and bowels.

Dose 1 to 2 grains.

RUMIN (See Rumex Crispus, page 69).

Dose 3 grains.

SANGUINARIN.

Derived from the root of Sanguinaria Canadensis.

Therapeutical uses.—It is said to exert a primary influence over the circulation, increasing the action of the heart, its secondary influence being that of an arterial sedative.

Dose 1 to 3 grains.

SCUTELLARIN.

Derived from Scutellaria lateriflora—Mad dog weed.

Therapeutical uses.—Possesses nervine, tonic, diuretic, and anti-spasmodic properties, and is recommended in the treatment of nervous affections.

Dose 1 to 3 grains.

SENECIN.

Obtained from Senecio gracilis—Cough weed, female regulator.

Therapeutical uses.—As its popular name implies, it has been used to remedy defective uterine functions—amenorrhœa, dysmenorrhœa, menorrhagia, hysteria, &c.

Dose 1 to 3 grains.

SMILACIN.

Obtained from the root of Smilax officinalis—Sarsaparilla.

Therapeutical uses.—Employed as an alterative, diuretic, and stimulant.

Dose 2 to 5 grains.

STILLINGIN (See Stillingia, page 71).

Dose 1 to 3 grains.

TRILLIIN.

Obtained from the bark of Trillium pendulum.

Therapeutical uses.—Owing to its astringent properties, it is recommended in the treatment of hæmorrhages and relaxed condition of the mucous membranes.

Dose 2 to 4 grains.

VERATRIN (See Veratrium, page 72).

Dose $\frac{1}{8}$ to $\frac{1}{2}$ grain.

VIBURNIN.

Obtained from the bark of Viburnum opulus—High cranberry, cramp bark.

Therapeutical uses.—Is reputed to exert an influence on the nervous system, and to act as a stimulant to the pulmonary apparatus.

Dose 1 to 3 grains.

ZANTHOXYLIN (See Zanthoxylum, page 75).

Dose 1 to 2 grains.

METRIC NOTES TO AID IN METRIC EVOLUTION.

The metric system of weights and measures is based on a standard measure represented by the METRE: a unit of length equal to a little more than one yard, viz., 39·370 English inches. French geometricians intended this standard should have reference to the circumference of the Earth, and therefore the metre is estimated as the one-ten millionth part of the distance between the Equator and the Pole, or 39·370 English inches.

It is divided into tenths, *decimetres*, hundreths, *centimetres*, and thousandths, *millimetres.* The multiplies are tens—*decametres,* hundreths, *hectometres,* and thousandths, *kilometres.* For *area* and *capacity* we have *square* metres, decimetres, &c., and also *cubic* metres, millimetres, &c.

The *Litre* is the unit of weight for fluid measures, and is the term used to denote one cubic decimetre, or 1¾ pints English. It is divided into 10ths, 100ths, 1,000ths, &c.

The *Gramme,* or the weight of one cubic centimetre of water at the temperature of 4 degrees centigrade, is the unit of weight, and equals 15½ grains. It is also sub-divided into 10ths, 100ths, 1,000ths, &c.

PROFESSOR HUGHES' TABLES AND SCALES.

Metric Measures of Length.

Millimetre	0·001	of a Metre	equals	0·03847	inches.
Centimetre	0·01	,,	,,	0·39370	,,
Decimetre	0·1	,,	,,	3·93707	,,
Metre	**1**	**Metre**	,,	**39·37079**	**inches.**
Decimetre	10	Metres	,,	393·70790	,,
Hectometre	100	,,	,,	3937·07900	,,
Kilometre	1000	,,	,,	39370·79000	,, (1 mile)
5 Kilometres	..	,,	equal 3 miles		

Metric Measures of Weight

Milligramme	0·001	of a gramme	equals	0·015	grains.
Centigramme	0·01	,,	,,	0·154	,,
Decigramme	0·1	,,	,,	1·543	,,
Gramme	1	**Gramme**	,,	**15·431**	**grains**
Decagramme	10	Grammes	,,	154·323	,,
Hectogramme	100	,,	,,	1543·234	,,
Kilogramme	1000	,,	,,	15432·348	,,

454 Grammes equal to 1lb.

Approximate equivalents of Cubic Centimetre (C.C).

0·001·	C.	C.	equal to	1-65 minim
0·01	,,	,,	,,	1-6 ,,
0·1	,,	,,	,,	1½ ,,
1	**C.**	**C.**	,,	**15 minims**
4	,,	,,	,,	1 fluid drachm
16	,,	,,	,,	4 ,, drachms
32	,,	,,	,,	1 ounce
50	,,	,,	,,	14 fluid drachms
100	,,	,,	,,	3½ ounces
1000	,,	,,	,,	1¾ pints or LITRE
4½ litres		,,	,,	1 gallon
Hecto litre		,,	,,	22 gallons.

Approximate equivalents of Weights for rapid reference.

1	Milligramme	equal to	1-65	grain
2	,,	,,	1-32	,,
3	,,	,,	1-22	,,
4	,,	,,	1-16	,,
5	,,	,,	1-13	,,
6		,,	1-11	,,
7	,,	,,	1-9	,,
8	,,	,,	1-8	,,
9	,,	,,	1-7	,,

1	Centigramme	equal to	1-6	grain
2	,,	,,	1-3	,
3	,,	,,	6-13	,,
4	,,	,,	7-11	,,
5	,,	,,	3-4	,,
6	,	,,	9-10	,,
7	,,	,,	1	,,
8	,,	,,	1¼	,,
9	,,	,,	1	,,

1	Decigramme	equal to	1½	grains.
2	,,	,,	3	,,
3	,,	,,	4½	,,
4	,,	,,	6	,,
5	,,	,,	7½	,,
6	,,	,,	9	,,
7	,,	,,	11	,,
8	,,	,,	12½	,,
9	,,	,,	14	,,
1	Gramme	equal to	15½	grains.
2	,,	,,	30	,,
3	,,	,,	46	,,
4	,,	,,	61	,,
5	,,	,,	77	,,
6	,,	,,	92	,,
7	,,	,,	108	,,
8	,,	,,	123	,,
9	,,	,,	139	,,

MEM.—To prevent mistakes it is better to write so man Grammes, Decigrammes, Centigrammes, &c., than to express the same in numerals or figures.

DECAGRAMMES.				DRACHMS.	
1	...	...	...	equal to	2 drachms.
2	...	...	...	,,	5 ,,
3	...	...	...	,,	7 ,,
4	...	...	...	,,	10 ,,
5	..	...	...	,,	12½ ,,
6	..	...	...	,,	15 ,,
7	...	...	...	,,	17½ ,,
8	...	...	...	,,	20 ,,
9	...	...	...	,,	22½ ,,

1 Kilogramme equals 2 lbs. 8 ozs.

HECTOGRAMMES.			OUNCES.
1		equal to	3 ounces five scruples.
2	...	,,	6 ounces 2½ drachms.
3	...	,,	9 ounces five drachms
4	...	,,	1 lb. 7 drachms.
5	...	,,	1 lb. 4 ounces.
6	..	,,	1 lb. 7 ounces.
7	...	,,	1 lb. 10 ounces 4 drms.
8	...	,,	2 lb. one ounce 5 drms
9	...	,,	2 lbs, 5 ounces.

Myriagramme equals 26 lbs. 9 ozs. 4 drachms.

Metric Fluid Measures.

MEM.—When using the metric system fluids are preferably prescribed by weight, employing the gramme, its multiples and subdivisions, just the same as with solids, thus avoiding the errors due to refraction, adhesion, and inaccurate measuring vessels.

For practical purposes four grammes of water may be regarded as equivalent to a fluid drachm of that liquid. And the same may be considered true of tinctures and infusions. Syrups, on the average are about one third heavier than water, so that a fluid ounce of a syrup will be approximately represented by 43 grammes, Fluids may be prescribed by volume in the metric, just as in the present system, using for that purpose the Cubic Centimetre, that is a volume represented by a cube, all of whose sides measure one Centimetre.

One Cubic Centimetre (C.C.) equals 16·231 minims. It is approximately regarded as one-fourth of a fluid drachm.

MEM.—Approximate weights of twenty drops of the following :—

	GRAMMES		GRAINS.
Ether Sulphuric at 66 deg. ...	0·35	equal to	5¼
Liq. Hoffman	0·45	,,	6¾
Alcohol at 80 deg.	0·45	,,	6¾
Oil of Almonds	0·55	,,	8¼
Acid Acetic at 10 deg.	0·60	,,	9
Essential Oil of Peppermint ...	0·65	,,	9¾
Distilled Water	0·75	,,	11¾
Laudanum	0·70	,,	11
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Bougies (Soluble), prepared with Theobroma Oil. Cylinders about 2½ inches long. Diam. similar to a

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No. 9 Bougie or Catheter.—Acetate of Lead, ¾ and ½ gr. Exsiccat. Sulph. Zinc., 1 gr. Ext. Belladonna, 2 grs. Ext. Opium, 2 grs. Gallic Acid, 1 gr. Iodoform, 5 grs. Ol. Eucalyptus, 5 grs.; Iodoform, 5 grs. Nitrate of Silver, 1, ⅓ and ¼ gr. Perchloride of Iron, 1 and ¾ gr. Sulph. Copper, ½ gr. Tannic Acid, 2 grs. and 1 gr. White Bismuth, 10 grs. White Bismuth and Acet. Lead, 10 grs.

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